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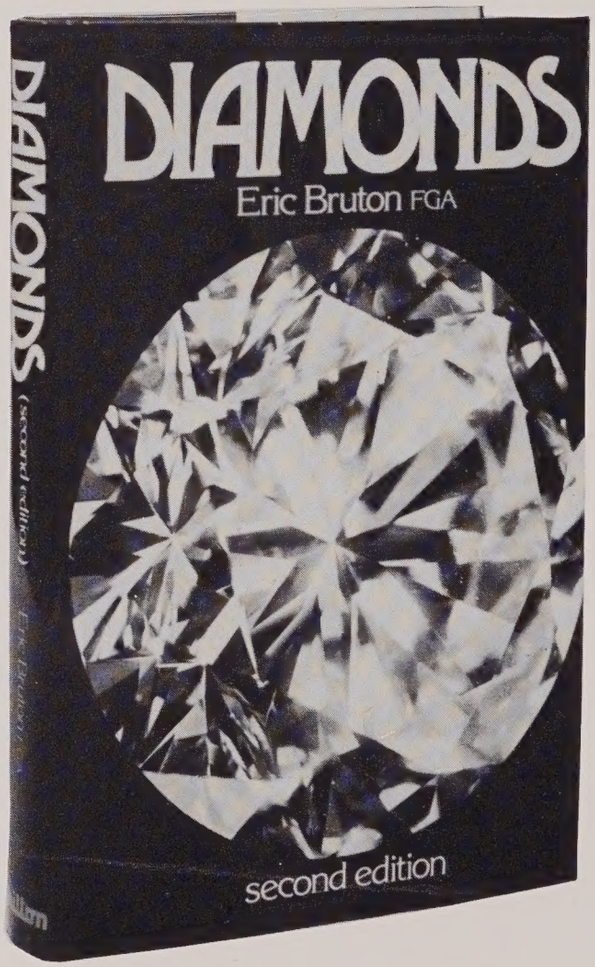

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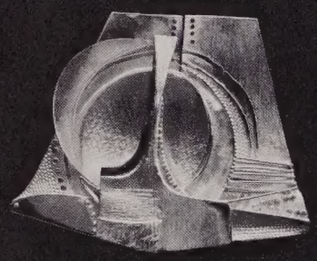

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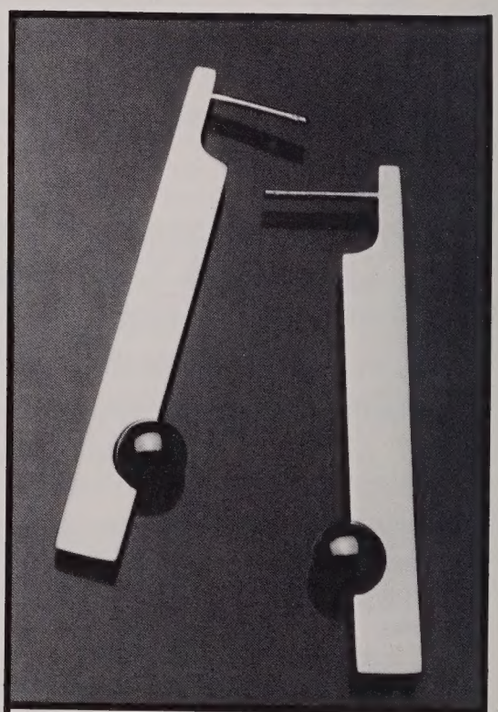

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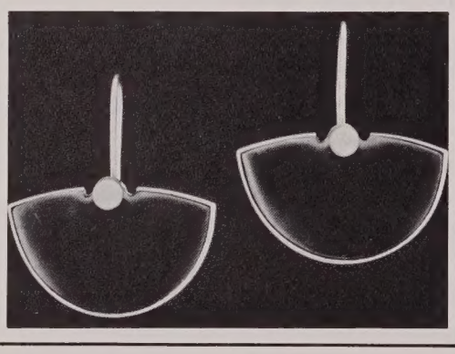

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summer/82 volume two, number three

Metalsmith

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Bruce Metcalf
Paula Dinneen
Bernard Bernstein
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Back inside cover: New Orleans ironwork from "Ferrous Space" by Marc Treib, article starts p. 23.
Photo: Marc Treib

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Editorial

"The trend of the present demand, a persistent growth of several years, is towards a personal and individual expression in the crafts or industrial arts. This tendency is the natural swing of the pendulum from the machine-made product of the manufactory which in its turn was the inevitable result of mechanical invention.

"When the artisan was an artist and the designer a craftsman, there was but a limited production of industrial art. The articles made were expensive and for the wealthy alone. The common utensils necessary to the household were made on the farm and were of the rudest possible character. But with the gradual development of machinery there came an abandonment of rural activities, a flocking to the city, manufacturing on a large scale, lower prices. . . .

"What then, are not manufactured products as now put forth a menace to the art life of the nation? Are not the people being educated in the use of and belief in machine-made ornament and meretricious display? Perhaps so, but no good purpose will be served by a ruthless condemnation of these things. Art appreciation is a most subtle thing and no one may dictate to his neighbor as to what he should or should not admire. It took time for the public to understand and patronize the product of the machine even though the price was favorable. It will take time for an appreciation of craftsmanship to influence the land but this consummation will most assuredly come.

"On the one hand there is the manufactory, teeming with 'hands,' riotous with wheels, turning out its wares by the thousand and supplying the demand of the many; on the other, there is the artist-artisan. He labors at his bench in sincere devotion to his chosen vocation. His work is laborious and exacting, he can make but a few things and for them he must ask a price relatively high. Both these conditions are necessary. The craftsman cannot supply the need of the people and the manufacturer has no time or thought for disinterested production. Herein lies the need and here is the mission of the individual worker.

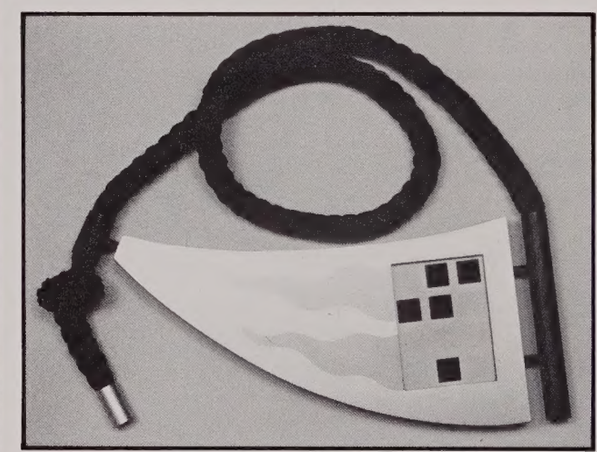
"In every age it is given to some to discern more than the multitude and it is theirs to teach. The people are anxious to learn, are eager to be led. What they demand will be manufactured and so by the irresistible lever of public opinion the man at the bench, if he be true to himself and to his craft, may move the millionaire manufacturer to make wares which, if not truly artistic, shall at least be inoffensive. Such a mission is not to be accomplished without suffering. The man who essays to attack a giant must be sure both of his ground and of his personal condition. He who would establish his craft in the knowledge and affection of men must possess enthusiasm, skill, discrimination and infinite patience. . . . The artist-artisan must have courage to destroy that which is below standard, and self-denial to resist the temptation to sell an unworthy product. The country needs craftsmen of this type and for them there is an important work."

The above is taken from Charles Binn's reknowned book *The Potter's Craft,* first published in 1910. In this issue Kenneth Bates speaks to the modern metalsmith. Both opinions ring true as timeless advice. With dedication and effort, a craftsman's influence can be felt beyond his immediate reach.—SB

Vernon Reed

"New Jewels"

October 2—October 31



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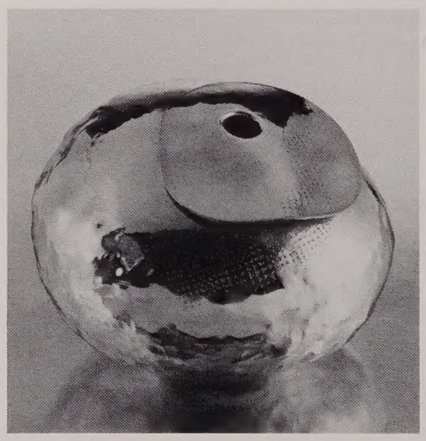

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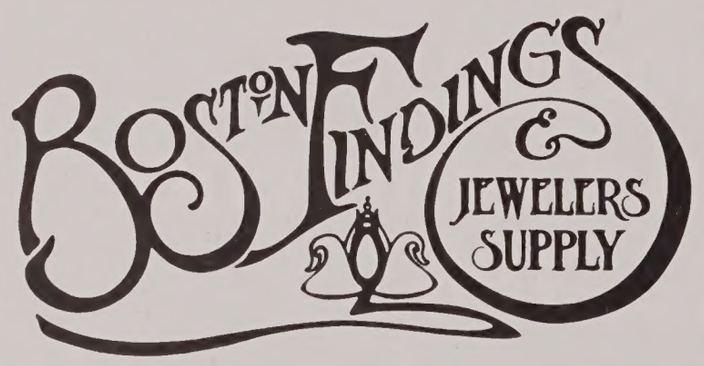

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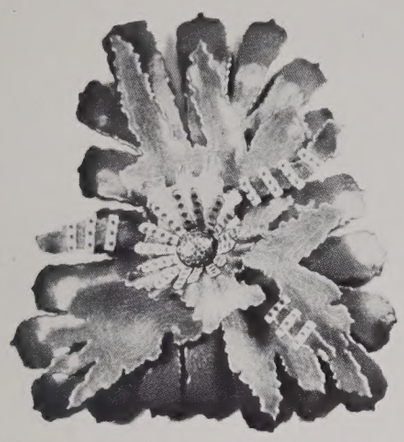

Blue Mutate, composite enamel with silver cloisonné, 8 x 5"

Juxtaposition of Organic Shapes, wet inlay technique, 12 x 12"

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Thoughts Concerning Design

Contemporary trends in designer-craftsman exhibitions are baffling, not only to the layman, who always knows what he likes, but to many practicing artists, who have become entrenched in an entirely different point of view, many of whom pugnaciously adhere to out-moded conventionalities and refuse to accept a revolutionary change which has been evident in the last two or three decades.

Someone has said, "If art can be proven, it is not art." Art must be accepted, felt, enjoyed and experienced. To me, lengthy, verbose analyses of one's work are often boring. If I am fond of a craftsman's work, I would much prefer that he return to the studio and produce more of it so that I may share the pleasure I get from viewing his unique gift, rather than for him to try to explain how he arrived at his uncommon solution. Design, especially, is something more than a calculated mental process. I don't believe the artist needs to intellectualize about the why, the wherefore or the source of his inspiration, or, as in jewelry, his choice of colors, textures and selection of metals. I believe artists have a touch of mysticism, whether they admit it or not, and mysticism does not lend itself to explanation. Show me what you have made and don't talk about it!

The economic urge, or the undeniable necessity of keeping the wolf from the door can be a craftsman's downfall and cause him to submit to local fairs or the all-too-present large-scale hobby shows when he is ill-prepared. Later, when he recognizes his more mature development, he may be quite embarrassed. It is easy to establish an unflattering reputation but mighty difficult to erase it. Quick, easy lessons given by amateur teachers only enhance this situation. Stress on good design is usually absent in such classes. Instant shock, attempted humor and acceptance of crudeness inform the vulnerable amateur that he has miraculously hit upon the "in thing" and that he should share his "genius." Sales of these early attempts at meager prices not only undermine what must be charged by more accomplished artists, but are apt to inspire the student to become enchanted with his success and convince him that further development is of little value.

This is not to say that by development one implies a concentration on technique at the expense of inspiration and individualism. The most exquisite technique applied to a basically incompetant or uncomfortable design motif is no panacea for improvement. It will only exaggerate its unpleasantness. Pretty flowers or gay butterflies taken directly from photographs found in *National Geographic* magazine, regardless of how skillfully they are rendered but lacking in an inherent sense of composition and individual interpretation, result in little more than "reading matter." Design students often ask, "Will I get an A if I do it over again more neatly?" The answer is, "No, neatness will not improve your particular design. Scrap it and search for a fresh idea."

Artists constantly hear the question, "Where do you get your inspiration?" An answer should not be attempted. Certainly the truly creative craftsman need not fret about the dearth of ideas. He finds his mind like a porous sponge into which a constant flow of possibilities is crammed. There are visual recollections spanning a lifetime of odd-shaped stones underfoot, wasted deteriorated scraps of rusted metal in junkyards, the maze of intricate freeways, architectural configurations, natural phenomena and a myriad of "motif thoughts" all waiting in the designer-craftsman's subconscious to be expressed in metal, clay or fiber. His dilemma is not a lack of inspiration, but rather a decision as to how he will tap his abundant reservoir.

In regard to research, it is incumbent upon each designer to use the material for experimentation and embodiment of a style which is unique to him alone. We see adaptations of the Art Noveau and Art Deco periods or Indian pottery motifs which do not objectively emulate these styles but utilize them in very substantial and clever designs. These are quite acceptable, although creativity should not stop at this point by any means.

It is a mistake to view contemporary work which one sees in current exhibitions, and particularly photographs in craft magazines, only to criticize pieces where technical skill is not evident, and neglect to recognize the more esthetic considerations proposed by the craftsman. Freedom of expression today often supercedes cut-and-dried rendering and accuracy. However, let it be said that it is an undeniable pleasure when both of these qualities are conspicuously manifested in the same piece.

Neither does design always spell out the time-worn principles so laboriously taught a few decades ago, such as balance, rhythm, symmetry and formalized color theory. Newer conceptions stress entirely different ways of thinking, are more germane to the designer's intentions, and at times still respect certain laws (not rules) about balance, rhythm and growth. The result is bound to be more appealing when the free, less academic approach is taken. But still in the case of jewelry it seems inadvisable to divorce any approbation of suitability, wearability or scale just to mimic the "new and different," as is too often the case. Critical adjudication is compelled to recognize such qualifications, but there are times when a jury's opinion is somewhat bewildering, and I find myself loath to agree. We should not be bound by some antiquated sense of righteousness to love everything or everybody. It is to be remembered that every example of work produced in the Art Noveau, the Art Deco or even the Classic period was not necessarily a masterpiece. I have discovered many instances of inferior work, even though they reflect the popular style of a particular period. Indiscriminate collectors still grab these "art objects" at ridiculous prices regardless of the fact that they represent the worst elements of design, their only virtue being that they hold some historic significance.

On the other hand, we convincingly say that a sculptured Egyptian head or a Chinese screen painting has endured through the centuries as examples of undeniable beauty (if I may use that out-moded word). Our conviction is unequivocably based on the very principles which often seem lacking in contemporary work. We recognize grandeur, majesty, monumentality and style in the Egyptian sculpture and sensitivity, gracefulness, delicacy, as well as some kind of intangible wonder, in the Chinese screen painting. Both prove that skill and techniques *can* be used to enhance an idea, but not for technique's sake alone. One should not feel, however, that all of today's productivity in the crafts is inferior simply because it does not reflect the magnitude or the significance of some historic period. Perhaps it does. Incidence of casual, sloppy, ill-conceived work is in the minority. Tremendous strides have been made, not all good, not all bad, but at least changed in the fields of metals, fiber and clay. A list of craftsmen who are producing veritable masterpieces in jewelry today would be impressive. There is much to admire in this field, and that which is good far surpasses that which is not.

A craftsman is sure of one thing—that to be happy he must find, or make, time to do his work. In his mind, all else seems to be trivial and a waste of time. My criticism of this is that he is apt to become a "craftoholic" and fail to recognize that time off now and then would be to his advantage. Inspiration does not always flow in a steady stream, but could be called "cyclic." There is always a good fund of it waiting to be tapped. One should relax, give it time and stop pushing. The craftsman would do well to consider some of the down-to-earth philosophy in "Desiderata," written in 1692. He should "go placidly amid the noise and haste, and find peace in silence (less talking, more doing), speak the truth quietly and clearly (stick to beliefs), talk kindly to the counsel of years and gradually surrender to youth (accept new ideas), keep himself interested in his own career, and use caution in business affairs (don't cheapen the craft by lowering prices just to make a buck) and, above all, in the noisy confusion of life be himself (individualism) and strive to be happy."

So, designer-craftsmen, be aware that you have a good life. Don't forsake what you have learned about design and have the courage to stand by your convictions. It will pay in the long run. Remember that you have a special gift.

—Kenneth F. Bates, author of *Basic Design,* is an enamelist and Professor Emeritus of the Cleveland Institute of Art

Our fine arts were developed, their types and uses were established, in times very different from the present, by men whose power of action upon things was insignificant in comparison with ours. But the amazing growth of our techniques, the adaptability and precision they have attained, the ideas and habits they are creating, make it a certainty that profound changes are impending in the ancient craft of the Beautiful. In all the arts there is a physical component which can no longer be considered or treated as it used to be, which cannot remain unaffected by our modern knowledge and power. For the last twenty years neither matter nor space has been what it was from time immemorial. We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art.—Paul Valéry, "The Conquest of Ubiquity"[1]

Stanley Lechtzin: Technic and the Organic Paradigm

by C.E. Licka

PRELIMINARIES: SCIENCE, TECHNOLOGY AND ART IN THE 1920s

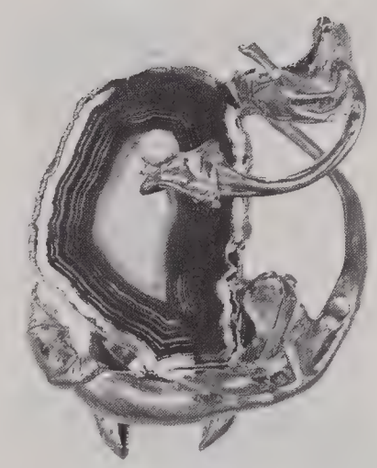
Valéry's remarks about the pervasiveness of science and technology and their capacity to transform our habits and ideas in the arts were written during a period of intensive artistic experimentation. If one looks for those notions that signal changes in the collective consciousness, Valéry would most likely agree with Ortega y Gasset that change appears "first in art and in pure science, precisely because they are the freest activity, the least dependent on social conditions."[2] So, at the outset, it is necessary to ask what were the liberating and transformative concepts during the 1920s that would provide a paradigm for later generations of artists and craftsmen?

One of the major conceptual shifts that was taking place during the first 20 years of this century focused on the rejection of 19th-century scientific and philosophical positivism with its immutable laws of cause and effect. Prior to the early modernist period, the positivistic mentality was characterized as being "analytical, objective, generalized, logical, absolutist, impersonal, determinist, intellectual and mechanistic."[3] Gradually this rational system of compartmentalized thought increasingly came under attack. Fissures and cracks appeared. And as the walls crumbled under the weight of progressive thinking, things were no longer isolated. The world was no longer "an accumulation of categories, abstract concepts and general laws."[4] Reality was viewed as an interrelational experience in which things and ideas were interconnected.

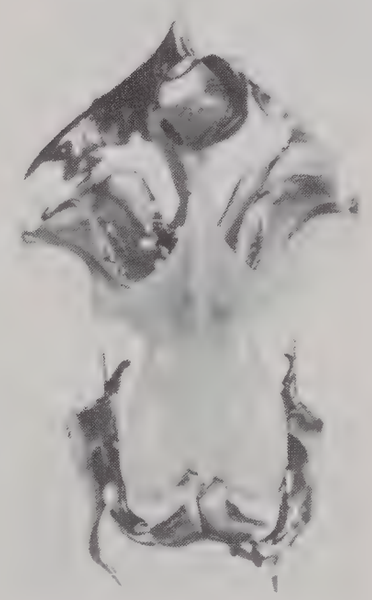
This contrast between 19th-century positivism and the interlocking sensibility of modernist thinking is crucial to understanding the relationship between science and technology and artists such as El Lissitzky, Lazlo Moholy-Nagy and Theo Van Doesburg. These three artists viewed the modern machine culture as being capable of transcending nature's randomness, irrationalism and subjectivism. In other words, they felt that their art signaled their autonomy from nature: *"If it is true that culture, in the widest sense, means independence from nature, we ought not to be surprised that the machine takes a principal part in the culture* [sic] *desire for style. The machine, more than anything else, is the phenomenon of spiritual discipline. . . . The new spiritual conception of art has not only been sensible of the beauty of the machine, but it has immediately acknowledged its infinite expressive possibilities in art. . . . The new possibilities of machinery have brought forth an aesthetic value, typical of our time, which I have characterized as 'mechanical aesthetics.'"*[5] This belief in "mechanical aesthetics" not only illustrates the chasm that separates the romantic idea of handicrafts and the Promethean nature of the machine, but it also ushers in a new style and vision of society. In short, the technical revolution of the 20s supplanted nature and replaced it with a progressive social and esthetic system based on the intellectual methods of science, mathematics and the machine.

But what did this style involve? By using machine technology, these technocratic artists attempted to parallel science by reducing forms to their basic elements. The first result was a structuring and restructuring of a variety of fundamental geometric shapes. As Van Doesburg said in his essay, *Will to Style* (1922): "striving for an elementary style based on elementary means."[6] Secondly, the employment of machinery in producing objects resulted in precisely defined and ordered configurations. A preference for the impersonal functional product rather than the individualized and handmade object was the norm. This leit-motif of impersonality was emphatically stressed in works that impersonalized pigment and texture. Logically, this led to the use of neutral titles or the use of codes, letters or numerals to identify compositions. Connected to this "precision and order" sensibility was the artist's conception of industrial forms and mass production. Large-scale production demanded standardization, and one of the esthetic virtues in the manufacturing process was its repetitive mass-produced forms. Moreover, through industrial technology, one could explore new processes and materials and their eventual application in the production of objects. Finally, dynamism was considered to be not only a general characteristic of the machine era, but it also signified the essence of the machine. As Lissitzky pointed out: "the machine showed us movement, showed us circulation. It showed us life and how it vibrates."[9]

This bio-mechanical analogue between life and mechanized vitalism is helpful in understanding how these artists envisioned the society of the future, a society predominantly based on the

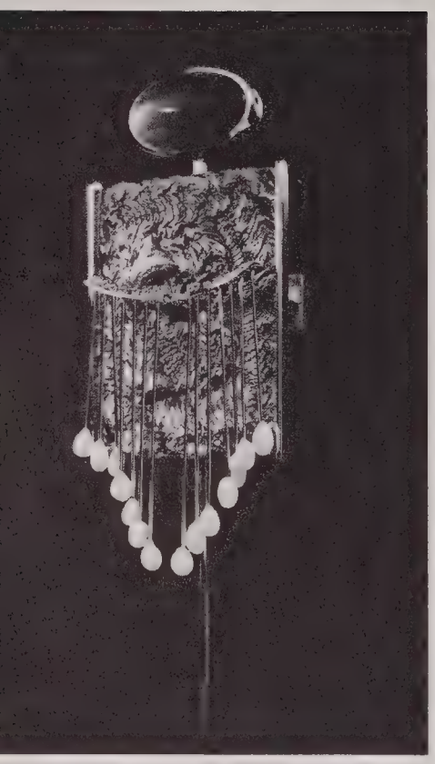


Brooch 24E, electroformed silver gilt, agate, pearl, 4 x 3¼ x 2", 1981

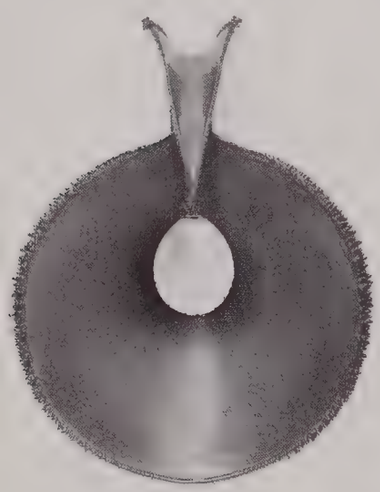


Cameo Corsage, electroformed silver and silver gilt, 23 pearls imbedded in acrylic, 6¼ x 4 x 3", 1979

Opposite: *Torque*, cast acrylic, electroformed silver gilt, 200 pearls, 10½ x 10½ x 1¼", 1978



Pin, reticulated silver, 14k yellow gold, moonstone, Biwa pearls, 1968



Cathode 7, electroplated copper, 16 x 23 x 8", 1977

objective and intellectual methods of science, technology, mathematics and the machine, but not totally consumed by rabid hydrophobic functionalism. To achieve this mechanistic nirvana, one had to arrive at a biological equilibrium between thought and action. This balancing act was crucial to Moholy-Nagy's thinking. For him, it wasn't the form or the technical aspects of production that should occupy man so much as the pragmatic organization of his affairs. Technics then, was a means of freeing man's energies. And this liberated man would be harmoniously integrated into a bio-mechanical universe which permitted him to maximize his creative powers: *"Individuals, who are part of a a biological whole, should find in the home not only relaxation and recuperation, but also a heightening and a harmonious development of their powers. The standard . . . but it will revolve around the general basis, that of the biologically evolved manner of living which man requires."*[10]

Mining for Paradigms

What should be apparent from my preliminary examination is that during the 20s a scientific paradigm came into being that was characterized by a combination of positivistic ingredients and a socio-political consciousness. The mediating agent was, of course, the machine and technic. However, after more than half a century, we have to ask whether or not a machine-oriented model, such as the purists advocated, should continue to be mined for all its worth, or has this paradigm been exhausted?[11]

Some interesting queries along these lines were raised by George Kubler, an art historian, in his book *The Shape of Time.* In his chapter on "Finite Invention," Kubler discusses a delimited notion of making or inventing artifacts: *"Each artist works on in the dark, guided only by the tunnels and shafts of earlier work, following the vein hoping for a bonanza, and fearing that the lode may play out tomorrow. The scene also is heaped with the tailings of exhausted mines: other prospectors are sorting them to salvage the traces of rare elements once thrown away but valued today more than gold. Here and there new enterprises begin, but the terrain is so varied that old knowledge has been of little use in the extraction of these altogether new earths which may prove worthless."*[12]

What does this "mining analogy" imply for the craftsman and artist? If "all the fundamental, technical, formal and expressive combinations have already been marked out at one time or another,"[13] then there would *not* be an ever-increasing world of forms. This means that we live in a circumscribed world of restricted "possibilities still largely unexplained, yet still open to adventure and discovery like the polar wastes long before their human settlement."[14]

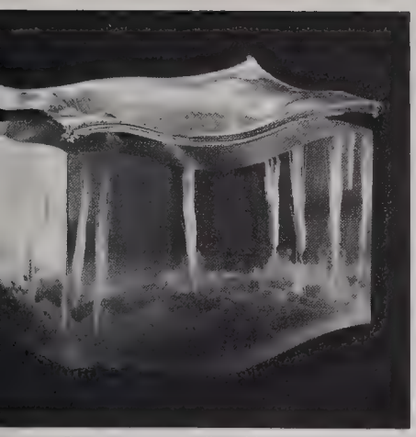
Let's assume that Kubler's finite theory of invention is a reasonable hypothesis. Is the scientific paradigm a viable model for the metalsmith in the 80s? But, more specifically, can machine technology be successfully used in an era that is now cybernetically oriented? What makes a paradigm successful anyhow?

For a model to be successful the craftsman, artist or scientist must be better at solving a few critical problems than his competitor: *"The success of a paradigm—whether Aristotle's analysis of motion, Ptolemy's computations of planetary motion . . . is at the start largely a promise of success discoverable in selected and still incomplete examples. Normal science consists in the actualization of that promise, an actualization achieved by extending the knowledge of those facts that the paradigm displays as particularly revealing."*[15] Then, why was the scientific model successful in the 20s?

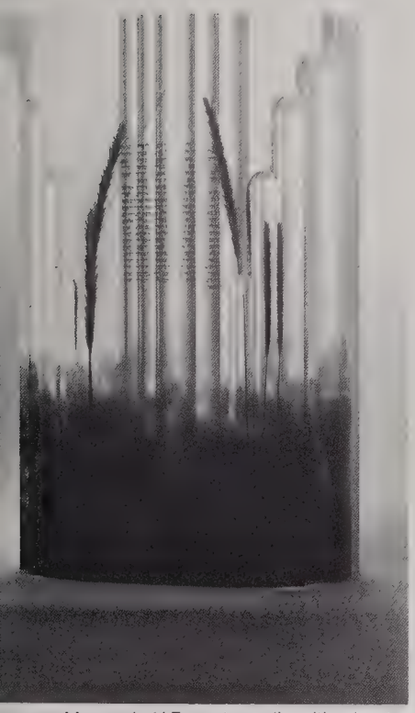
Historically, the devastation caused by World War I, the accompanying despair that came in its wake and the Russian Revolution were some of the props that set the stage for the purists to pursue their mechanistic, idealistic and visionary notions. But it was science and the machine that offered the means to order and begin the task of rebuilding the world. Also, underlying the Constructivist, Bauhaus and De Stijl experiments was an intense collective and dynamic spirit. However, as time passed, these various movements lost their initial solidarity and their functional ideas were transmitted into other institutional frameworks in Europe and America by a variety of craftsmen, artists and architects. New enterprises based on the initial scientific paradigm from the 20s do spring up in places, but the process of analyzing and mining for concepts had begun.

What appears to be happening in the state of the metalsmithing art today? Is there any value in comparing today's metalsmiths' objects and attitudes to the mechanistic form-function era of the 20s? We have witnessed in the last 20 years an acceleration of new techniques and the revival of older traditional techniques, the use of a variety of materials in different combinations and a series of short-term stylistic developments. But there is one area that has not been developed to its fullest and requires a transition in conceptual thinking on the part of the metalsmith. This is the leap from reasoning in the patterns of First Machine Age technology—the mechanistic esthetic—into the cybernetic world of miniaturization and informational process systems. The mechanical esthetic has been mined extensively in this century and the possibilities for expansion have lessened. By shifting attention to and exploring another technological paradigm, the metalsmith of the future has the potential to break new frontiers.

Take for example the "Good as Gold: Alternative Materials in American Jewelry" exhibition held at the Renwick (January-March, 1982). It was apparent from this exhibition that the materials' base has widened. However, the problem of whether to use nonprecious or precious materials is no longer a burning issue. How can one even argue there is any artistic risk involved with these newer combinations of materials? Within the tradition of metalsmithing and the crafts as a whole, the artisan has always dabbled in a type of mixed-media approach, whether it be in different metals' combinations or mixtures of assorted materials. But when we take a closer look at the objects that directly allude to cybernetic systems by means of metaphor (i.e., wires, circuitry or gimmicky electronic devices), what do we see? One obvious reading of these quasicybernetic works is their superficiality. Yet, as weak as these visual expressions might be,



Paten, cast acrylic with wheat embedment, electroplated copper, 11 x 10½ x 14¼", 1976



Mezuzah 41E, cast acrylic with wheat embedments, 14 x 8½ x 3½", 1981

they point out that at least some metalsmiths are thinking consciously and unconsciously about the Second Machine Age and its technology. But where is the commitment to this newer form of technology in the metalsmithing ranks? At the moment it appears diffuse and unsubstantial. Metalsmiths are still plodding along in the tracks of older mechanistic patterns, but there are some new and old enterprises that are enlightening in this exhibition, for example, those experiments dealing with conceptually oriented jewelry systems and electrochemical research.

Lechtzin and the Organic Paradigm

During the late 50s and early 60s, the major personnae of the metals' establishment were still subsumed within the older metals' matrix. During this embryonic phase of American metals' development, Stanley Lechtzin emerged as one of the pivotal figures in the metal's vanguard, supporting a progressive and technological orientation in metalsmithing. What is critical to understand is that his ideological stance affected many metalsmiths and students to be conscious of technology in their artistic production. Lechtzin has bridged the distance between the First and Second Machine Ages by expanding upon and mediating esthetic attitudes and technologies that originated in the precybernetic era. The result is a highly personal and synthetic approach that fuses technological processes with organically conceived forms.

Lechtzin's ideas began to evolve in the early 60s while he was still a graduate student at Cranbrook Academy of Art. At that same time, he began to assimilate various stylistic and esthetic notions, in particular, Swedish and Danish design, The Bauhaus, Abstract Expressionism and Art Nouveau.

Throughout the early 60s, Swedish and Danish designs were being disseminated in illustrated publications such as *Dansk Form, Gold und Silver, Design Quarterly* and *Mobilia.* Moreover, the work itself was on view at Georg Jensen's New York showroom. Lechtzin was drawn to the structurally coherent compositions of Nanna Ditzel, a Danish designer who worked for Jensen. The influence of her style—characterized by elegant and severe forms, and the untraditional combination of materials (i.e., the use of semiprecious stones set in silver)—is still traceable in Lechtzin's reductivist work.

But if there is one influence that has been critical to Lechtzin's technological direction, it is the Bauhaus' preoccupation with experimentation and methodological pursuits. But as useful as the Bauhaus' ideas might have been in shaping a cohesive body of work, Lechtzin has always rejected a formulaic response to image making, feeling that if the machine totally dominates the artistic process, the forms will read lifeless and become dated. For example, he excludes the impersonal, repetitive and standardized forms that result from machine production in his own work, and argues for unique object production by means of technological application and research. All materials and processes are good and useful, he feels, and this means that one should not be limited by a materials or process bias. Since synthetic materials can be designed by man, the artist who uses them can control his creative destiny and tailor it to meet his conceptual needs. In other words, technology becomes the liberating catalyst for the metalsmith.

During the early 60s Lechtzin began to respond to organic configurations. For example, instead of following the palar and geometric direction developed by Margaret de Patta, he began to combine Art Nouveau and Abstract Expressionist elements into hybrid abstract forms. At this time, Art Nouveau objects were reaching a wider cross-section of the public. In fact, the Museum of Modern Art's "Art Nouveau Exhibition" in 1959 helped to legitimize for Lechtzin organically based elements such as human, plant and animal forms. This emphasis on a biotic esthetic was complemented at the same time by Abstract Expressionist overtones. Abstract Expressionism emphasized a direct and spontaneous approach to studio activities. So, Lechtzin experimented with textures, casting techniques and, in particular, the freedom of waxwork. His initial probes into cast forms and the direct response to metals laid the groundwork for later explorations.

Two pins dating from 1968-1969 are illustrative of his early formative phase. Both pins read graphically in their surface treatment. Formal interconnections are set up by means of superimposed layers consisting of texture, color, lines and stones. Symmetry and order is tempered by internal asymmetric modulations of "dripping" pearls at the base and clustered at the top. In effect, they parenthetically enclose the circular-shaped agate. The meandering lines also reinforce the natural agate patterns. These pins appear to share a mythic correspondence with Abstract Expressionist tendencies and fetishistically disposed jewelry. The agate pin is primarily influenced by Art Nouveau with its sinuous linear arrangements. However, it differs from the reticulated pin with its totemic moonstone hovering over the patterned networks and hanging pearls.

In 1963, Lechtzin saw some bronzed baby shoes in a display window. He was immediately struck by the idea that the electroforming process offered a technology for working metal. Up to that point, it appears that no one had used it as a direct process. Electroforming, which builds up deposits of metal by means of electrochemical action, was one aspect that appealed to him. The other, was its structural potential—the ability to construct walls. The employment of electroforming as a direct process supplied him with the necessary technological information to create lightweight functional forms that couldn't be achieved by casting.

Lechtzin's initial experiments in works such as *Cathodes 4A/7* are some of the purest examples of chance and control in heavy electroplated work. By retrieving the actual cathodes used in electrodiposition, he evolved a kind of *process readymade.*

But it is in the *Torque Series* of the early 70s, and the more recent *Cameo* brooches, that his use of technology is integrated into a highly personal esthetic focusing on sexual identity and subtle interlocking visual elements.

His selection of Celtic torcs was directed towards the elimination of conservative associations imputed to men's jewelry. The choice of *torque/torc* was not only a play on words, *torque/twisting,*

Cameo Brooch, photoimages embedded in polyester, electroformed silver, silver gilt, 6 x 6½", 1973

Cameo Brooch, photoimages embedded in acrylic, electroformed silver, silver gilt, 6½ x 6½ x 3", 1975

but also, historically, refers to Irish torcs from the La Tène period (3rd century B.C.). The torque was mainly chosen for its masculine properties and designed for Lee Nordness's exhibition during the early 70s that dealt with body ornament for men. From that point on, the torques became increasingly feminine with an increase in cast acrylic elements. However, Lechtzin's later symmetrically oriented torques are in marked contrast to the sinuous and twisting torques of 1970-1971. Even at this early stage of development, there is a tendency towards the symmetrical rather than the Rococo-like sensibility of point-counterpoint, and it is these later torques that set the precedent for the reductivist character in his recent work.

The cameos, consisting of embedded photographic images of his wife, Daniella Kerner, reflect the most intimate phase of his jewelry development. In these works he reinterprets the traditional convention of cameo relief cutting. Instead of cutting away at the material to expose various levels of the stone or gem, he uses different layers of colored acrylic, which operates like a plasmic trapping device. By immobilizing the sensuous figurative elements of the photographic image, he has produced a tableaulike effect. Daniella's image is suspended within the acrylic and reads like a figurative Rorschach with its symmetrically arranged mirror images. Consequently, the female body provides an analogue to the transparent and undulating surfaces of the acrylic. Furthermore, when one looks at the cameo series as a whole, there is a sensation of germination and budding always present. Even the derivation of the word "cameo," possibly from the Arabic *qam'il*, meaning flower bud, reinforces the botanical and organic nature of these works.

This organicism takes on an added dimension in his religious vessels. A *Paten* (1976) and his recent *Mezuzah 41E* (1981) are indicative of his poetic response to the inherent symbolism and function of these objects. The *Paten* consists of two sections. The upper portion of the electroformed plate has a slightly undulating surface that matches and rests upon the acrylic base. Implanted within the cast acrylic base is a reddish primordial mistlike vapor from which some sparsely spaced wheat stalks emerge. By setting up a botanical-religious analogy—the mystical connection between the body of Christ (the symbolic wafer), the wheat and the reddish hue (the blood of Christ)—Lechtzin conjures up the image of Christ's sacrifice. He expands upon and distills the idea of a traditional reliquary with its encrusted and bejeweled surfaces by using transparency in a different manner. Instead of light being used in a reflective manner and as surface embellishment (i.e., gems and cabochons), Lechtzin allows the container to operate as a transparent window. One is given a poetic and reverential view into the mystery of the Last Supper and the Crucifixion by means of the specified symbols. And finally, the separate lightweight electroformed plate provides a practical solution by giving the priest a receptacle that can be easily handled as well as holding a quantity of wafers for communion.

Mezuzah 41E is illustrative of Lechtzin's innovative approach to Judaica. By integrating his personal impressions with the symbolic intricacies inherent within the Jewish religious tradition, he not only adheres to an exegesis of the biblical sources, but also incorporates his esthetic concerns at various formal and expressive levels. A mezuzah according to Judaic tradition consists of a piece of parchment inscribed with the biblical passages Deuteronymy 6:4-9 and 11:13-21. Written on this parchment is the word "Shaddai" (one of the ancient Hebrew words for God, the almighty). This parchment is then rolled up in a container and affixed to a door frame as a sign that a Jewish family resides therein. The original reference to putting the mezuzah into a container and binding it to the head and arm, or the placement of it on posts and gates, points out its amuletic function. However, Lechtzin chose the architectural reference for "post" rather than the phylactery (the container that is bound to the forehead and the arm). In this piece the cast acrylic piece with its milled and fluted decoration suggests a columnar association and relates to the idea of a structural support—the "post." It also provides the architectural ingredient for the sacred logos of the Deuteronymy passage. Within the interior, the base is saturated with a deep blue celestial atmosphere and a series of wheat stalks symmetrically arranged. These stalks further enhance the verticality of the fluted decorations, and operate as a bowerlike parenthetical enclosure that accentuates the centrality of the inscription and its symbolic message. By using synedoche, the part for the whole, Lechtzin presents us with a section of a classically rendered column. This not only parallels the idea of domicile and post in the biblical passage, but also incorporates the idea of the Temple of God. Just as the column supports a roof and connects it to the base, the mezuzah operates like a conceptual message that links God to the faithful observer. In a more abstract sense, this becomes the connection between heaven and earth—the sacred word made tangible.

Throughout his work, Lechtzin incorporates personal symbolic and poetic statements, but they are always tempered by his tendency to transform a problem into a functional answer. This functionalism is charged with organic energy and a mediation of various complementary technologies. But it is not the functionalism of the mechanical esthetic that reached its apogee during the 20s.

His response to that scientific paradigm has been highly selective and his "prospecting" has taken him into different regions to explore. Instead of limiting himself to elementary shapes that could be used for mass production, he has chosen to use industrial processes for purposes of unique object production. This means that those esthetic virtues of the machine that were dear to the hearts of the mechanical esthetes—impersonality, anonymity, standardization, a collective sensibility—are supplanted by a highly individualized responsé to making objects. But the exploration of materials and processes, and above all, the "ordering consciousness" of the era are of great importance to him. For Lechtzin—like the purists—art represents an independence from nature; the craftsman is capable of manipulating and synthesizing his own universe. And it is technic that provides the basis for him to construct his organic paradigm.

Opposite: *Cathode 4A*, electroplated copper, 1974

C.E. Licka teaches Art History at Temple University, Philadelphia, Pennsylvania

Notes: 1. Paul Valéry, "The Conquest of Ubiquity," *Aesthetics* (New York: Bollingen Foundation, 1964), p. 225. This essay, "La conqueste de l'ubiquité", was published in *De la musique avant toute chose* (Editions du Tambourinenaire), 1928; in *Pièces sur l'art* (1934) in Valéry's Oeuvres II, Pléiade (1960); translated anonymously as "On Music" in *The Commonweal* (Oct. 15, 1930). **2.** James McFarlane, "The Mind of Modernism," *Modernism 1890-1930* (New York: Penguin Books, 1978), p. 83. **3.** *Ibid.* p. 75. **4.** *Ibid.* p. 83. **5.** H.L.C. Jaffe, *De Stijl: The Dutch Contribution to Modern Art, 1917-1931* (Amsterdam: J.M. Meulenhoff, 1956) pp. 157-158. This quote is derived from Theo Van Doesburg, *De Stijl*, V, pp. 33-34. **6.** Joost Baljeau, *Theo Van Doesburg* (New York: Macmillan, 1974) p. 122. **7.** *Ibid.* p. 148. **8.** Sophie Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts* (Greenwich: New York Graphic Society, 1968) p. 347. **9.** Lissitzky-Küppers, op. cit. p. 333. Taken from El Lissitzky's "New Russian Art: a Lecture" (1922). **10.** Richard Kostelanetz, ed. *Moholy-Nagy* (New York: Praeger, p. 110. This quote is taken from Moholy-Nagy's essay "The New Bauhaus and Space Relationships" (1937). **11.** Purists in this context is being used to refer to that group of artists who were associated with a "mechanistic esthetic" such as Lissitzky, Van Doesburg, Moholy-Nagy or architects like Walter Gropius and Mies van der Rohe. **12.** George Kubler, *The Shape of Time (Remarks on the History of Things* (New Haven and London: Yale University Press, 1967), p. 125. **13.** *Ibid.* p. 125. **14.** *Ibid.* pp. 125-126. **15.** Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962), pp. 23-24.

On View

Outstanding work of students graduating from college and university degree programs in metalsmithing and jewelry design throughout North America

An ongoing series. Program descriptions were furnished by participating schools.

School for American Craftsmen, Rochester Institute of Technology

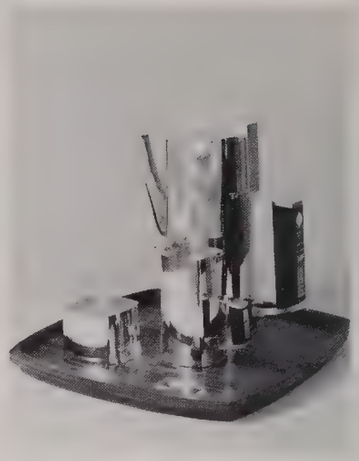
The objectives of the programs of study in the School for American Craftsmen are to provide for creative growth, the development of professional competence and intellectual and cultural enrichment. Graduates of the program are prepared for careers as self-employed designer-craftsmen, as designers or technicians in industry, or as teachers or administrators of crafts programs.

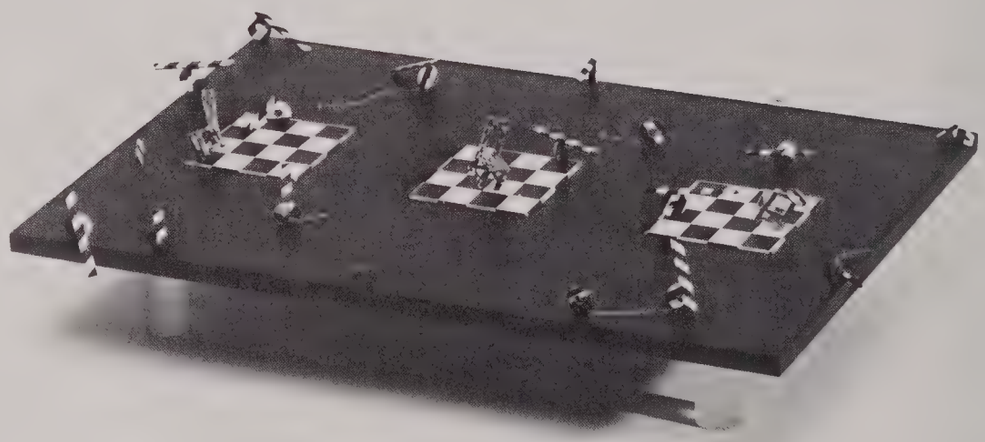
The metal program expresses the educational ideal: the conviction that technical competence provides the most satisfactory foundation for the expression of creative invention. However, the mastery of techniques is seen as a means, not an end. The end of education in the metals program is the exercise of creative imagination.

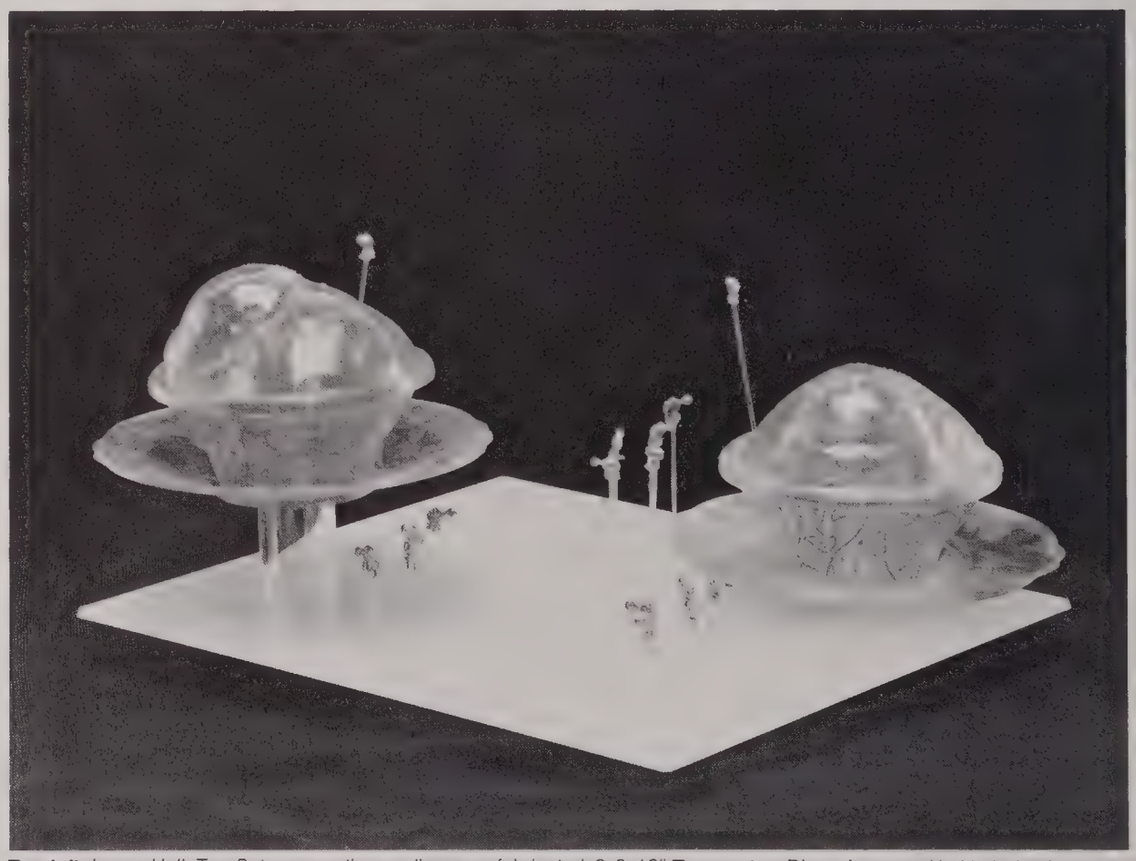
Technical process education includes all of the fundamental, intermediate and advanced information normally associated with the discipline of metalsmithing. Assignments are given with esthetic premise as guides and technical information as a method of solution.

Objects produced by students include holloware, jewelry and sculpture. In all cases, these objects express the students' view of functional or nonfunctional format.

Metals Department
School for American Craftsmen
Rochester Institute of Technology
One Lomb Memorial Drive
Rochester, NY 14623
Telephone: (716) 475-2642
Hans Christensen
Gary S. Griffin
Amy Davidson







Top left: Lynne Hull, *Tea Pot,* copper, tin, acrylic; spun, fabricated, 8x8x12″ **Top center:** Diane Aronson, *Untitled,* aluminum, 7x16x6″ **Top right:** Donald Stuart, *Coffee Service,* sterling silver, rosewood, inlays of various minerals, ivory **Center:** Ellen Reiben, *Three Chairs Dancing with Invited Guests,* acrylic, epoxy resin, painted metal, 11x8x2″ **Above:** Rose Corcoran, *Ice Cream,* uvex, copper, plastic rod, plexiglas, 12x11x7″

University of Washington

The Metal Design Program at the University of Washington in Seattle is part of the School of Art within the College of Arts and Sciences. It offers B.F.A. and M.F.A. degrees. Undergraduate course offerings include Beginning, Intermediate and Advanced Jewelry, Beginning and Advanced Enameling and Beginning and Advanced Holloware (which includes rendering and presentation), after which the student works on an independent basis with an instructor, the full degree program taking five years. Introductory classes are limited to 14 students and there are usually about 20 or so declared majors. The two-year graduate program consists of six students who work with both Marshall and Hu. Each has a bench in rooms adjacent to the main shop complex and has 24-hour access to the studio. Graduate students are given the freedom and are expected to pursue their own individual directions; their program culminating in a graduate exhibition. Participation in a weekly metals graduate seminar is required. Topics range from critiques of their own or of others' work, to a wide range of subjects pertaining to becoming professionally active in the field.

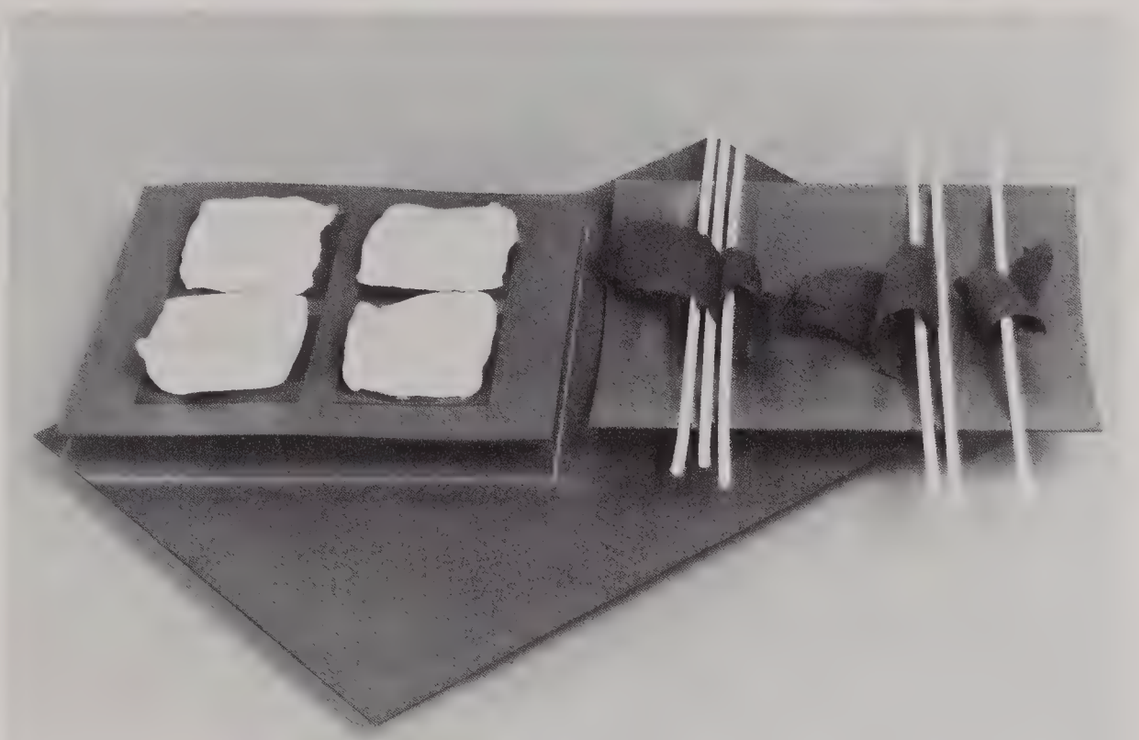
The School of Art has excellent programs and facilities in other disciplines and students are welcome to design projects which incorporate other media with metal. When scale takes a student beyond the limits of the bench area, opportunity to work in the sculpture court is available.

The Metal Design complex utilizes an area of about 4,700 square feet on the first floor of the Art Building. There are two main rooms for holloware and jewelry/enameling plus three smaller rooms for buffing, electroforming and machining. Two graduate bench rooms and a faculty office/studio for Mary Hu. During this last year, an entire new exhaust system was installed, making working conditions as safe from fumes as presently possible. All burn-out and casting, welding, annealing and pickling, pitch, etching, patination, buffing and electroforming areas are vented with an exhaust system in the roof to eliminate noise.

Location in Seattle gives students easy access to several jewelry and metal supply houses as well as a variety of surplus and salvage yards connected with the area's shipbuilding and aircraft industries.

About 50% of undergraduate majors go on to graduate programs, others work as independent craftsmen or in the area's industries as designers or apprentices. The graduate program strives to present a balanced view of options within the field through discussions and visiting speakers with varying backgrounds and points of view toward technology, esthetics and career goals. However, because the school is aimed at an art education, there is heavy emphasis on creativity and personal involvement. Former graduates are working as designers, running retail businesses or their own independent studios and teaching.

Metal Design Program
School of Art DM-10
University of Washington
Seattle, WA 98195
Telephone: (206) 543-0970
John Marshall • Mary Lee Hu
Ramona Solberg



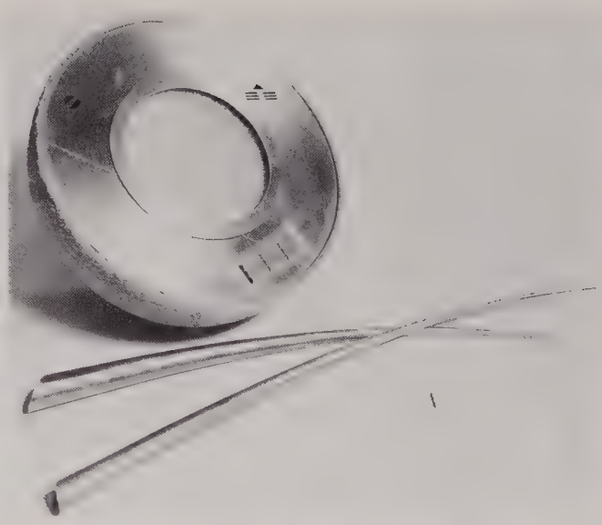
Top left: Kay Denman, untitled, silicon, bronze, plexiglass, sterling silver, marriage of metals, 2½x1¼". Photo: Philip Red Eagle **Top right:** Harriet McNamara, *Masque for a Lady*, cloisonné enamel on forged copper **Center:** Ruth Ashley, *Markers of Change and Process, I*, steel, porcelain, handmade paper, paint, pastel, 24x22x3 **Above left:** Florence Wood, untitled, sterling silver, copper, nickel; forged, sunk, constructed, 10x6x5". Photo: Philip Red Eagle **Above right:** George Kimball, *Untitled*, mild steel; torch cut and forged hot on a trip hammer and by hand, 24x18x6"

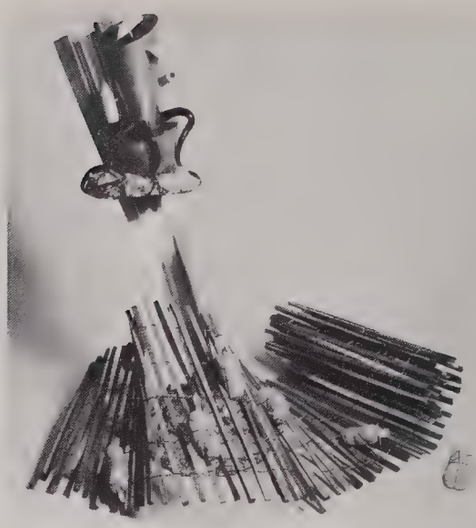
Kent State University

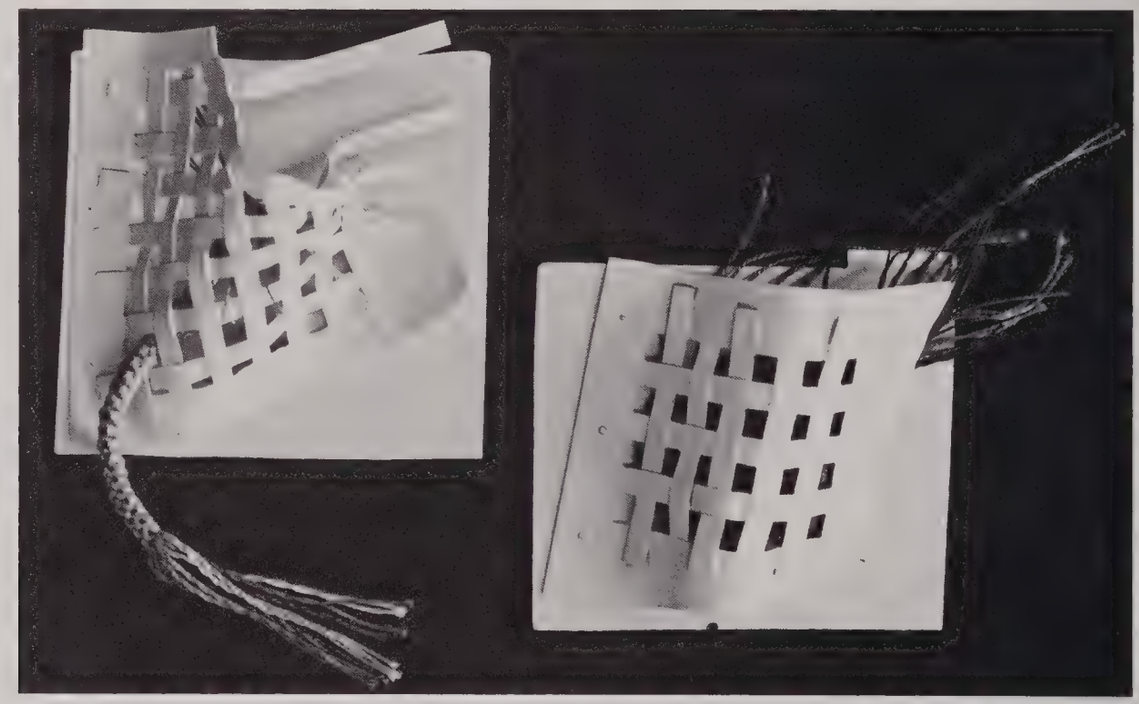
Kent State University is exceptional, and possibly unique, in offering separate programs in both jewelry/metalsmithing and enameling. B.F.A., M.A. and M.F.A. degrees are awarded in both areas. The metals area, which reached national prominence under Mary Ann Scherr, is now headed by Bruce Metcalf. The enameling program was started by Mel Somerowski, who has been teaching here for 25 years. All traditional enameling techniques are taught, but no limitations are implied.

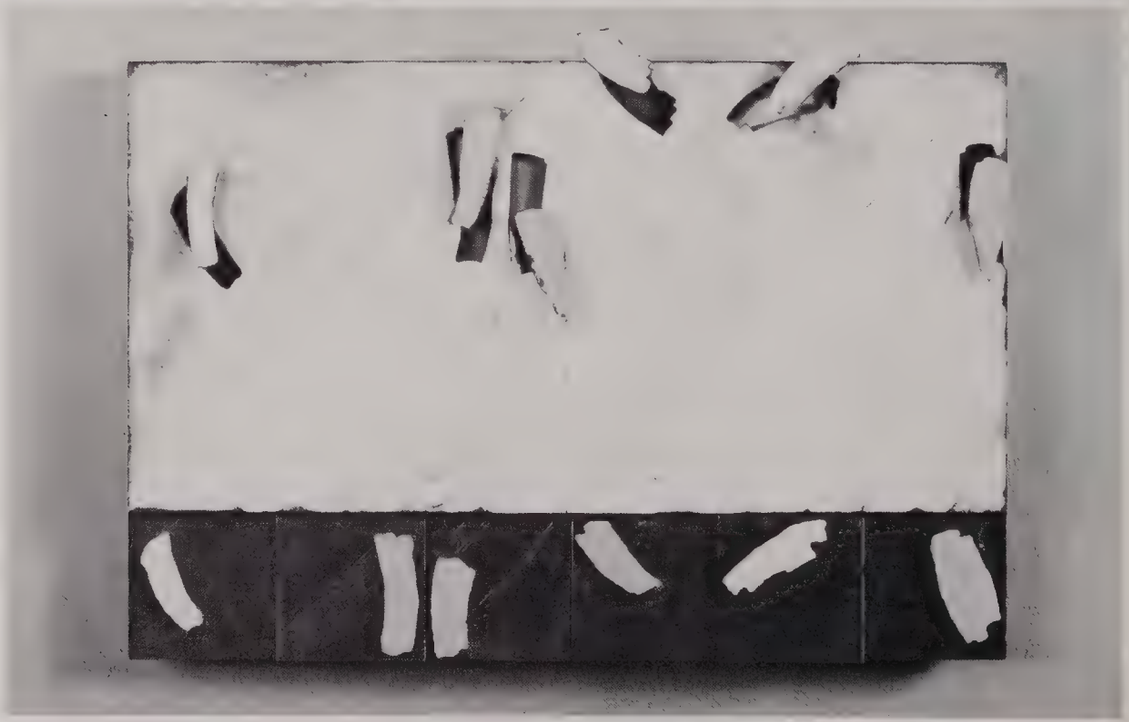
The metals studio is equipped for all the customary processes, such as hammerwork, casting, etching and moldmaking. In addition, facilities for electroforming and blacksmithing are available. In the graduate program, Kent State University looks for people who consider themselves artists working with metal or small objects. The emphasis is twofold: on technical expertise and on making a strongly personal statement that reflects an awareness of current esthetic direction.

Art Department
Kent State University
Kent, OH 44242
Telephone: (216) 672-2190
Mel Somerowski
Bruce Metcalf









Top left: Joseph Wood, untitled vessel, copper, sand, glue, bowl—5½"d. **Top right:** Matthew Janke, *Dirt Bags Banana,* copper, brass, lead, wood, iron wire, unfired clay, silicone, 16"h. **Center:** Michiko Hakutani, *Woven Pins,* copper, silk thread, paint, each 3"h. **Above:** Gretchen Goss, *Six Strokes,* enamel, 8 x 12"

California State University, Long Beach

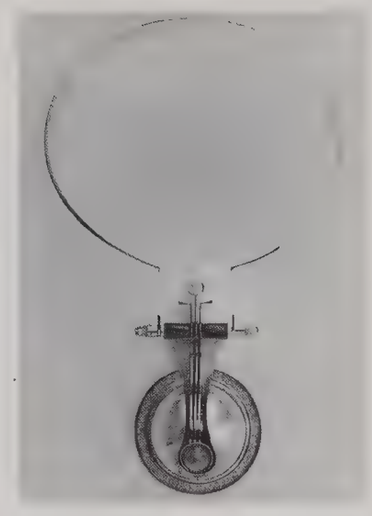
The Metalsmithing/Jewelry program at California State University, Long Beach is one of the best-kept secrets outside of California. Located in an ideal oceanside climate within 35 minutes of the metropolitan Los Angeles area with a low, low tuition for California residents (one-year California residency requirement), this program has a long history of turning out a large body of highly motivated and talented artist-craftsmen-teachers, who are now located around the country. Metalsmithing/Jewelry degrees offered include B.F.A., M.F.A. and M.A.

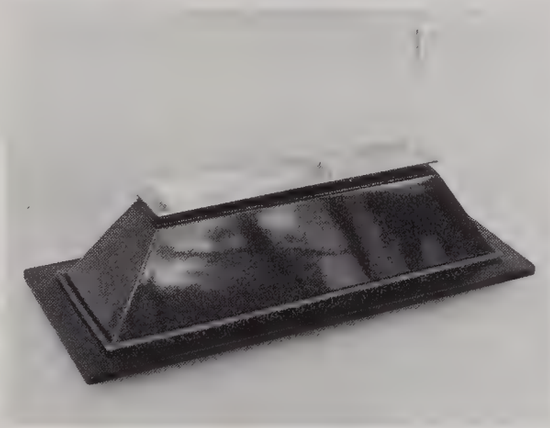
CSBLU has extensive undergraduate facilities, including everything for all metalsmithing and jewelry interests. There is in addition a separate, well-appointed graduate work area with 12 jewelry workbenches, a large outdoor architectural blacksmithing facility with both gas and coal forges, six anvils, six post vises, steel layout benches, a 50-pound "little giant" power hammer and casting foundry facilities. There are also separate rooms for electroplating, electroforming and buffing. The facilities are open to all enrolled students 24 hours a day, seven days a week.

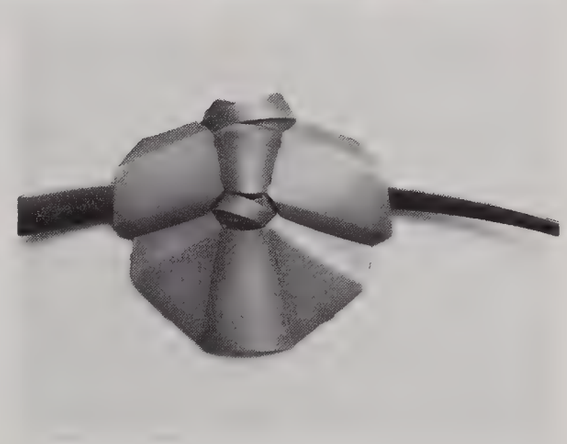
The undergraduate B.F.A. program is highly structured, consisting of seven metalsmithing/jewelry classes. The first four requirement classes cover technique, problem solving and design. The remaining three focus on independent study or new techniques in the areas of enameling, architectural blacksmithing or jewelry casting. The student has a great deal of freedom to work in whatever metalsmithing/jewelry area he chooses.

The M.F.A. graduate student is encouraged to pursue independent work so he can grow and progress, with emphasis in personal direction according to individual artistic inclination. Most graduate students are expected to show continuous growth and independence in their work—in their merit of concept, esthetics and craftsmanship. All in all, there is great diversity among our graduating students which reflects our openness to personal pursuit not limited by material or technique. In addition, students are encouraged to go outside the metalsmithing/jewelry area to draw from the outstanding facilities and disciplines within the Art Department and other disciplines on and nearby our campus.

Metalsmithing/Jewelry Department
California State University
1250 Bellflower Boulevard
Long Beach, CA 90840
Telephone: (213) 498-4877
or 430-6673
Al Pine
Dieter Muller-Stach







Top left: Laurie Hoskins, *Chalice,* sterling silver, ivory, ebony, assorted colored stones **Top center:** Pat Caulfield, *Brooch,* sterling silver, feathers, glass, moonstone; cast, fabricated **Top right:** Hal Ross, *Worlds in Space,* rutilated quartz, malachite, gold plate over sterling silver; fabricated **Center left:** Irene Mori, *Forgotten Choices,* nickel, sterling silver, ivory, copper, 14k gold, lacquered brass, acrylic **Center right:** Thomas Ford, *Hair Ornament,* titanium, brass, acrylic **Above:** Jim Kovalich, *Tool Group,* steel with copper and brass inlay

Southern Illinois University at Carbondale

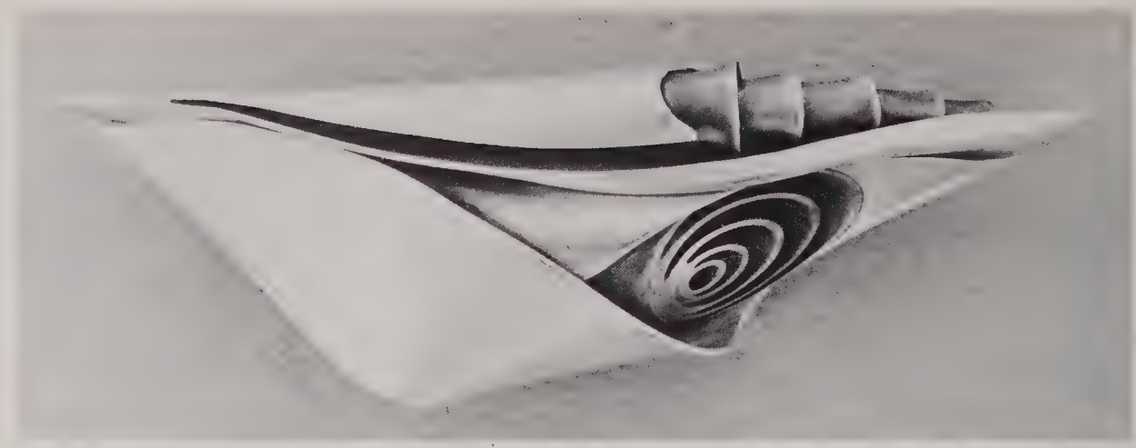
The metalsmithing program at Southern Illinois University at Carbondale offers B.A. and M.F.A. degrees. The undergraduate program, supervised by Richard Mawdsley, is designed to acquaint the student with a wide range of technical and mechanical skills while encouraging personal esthetic development. The first three years of study are used primarily to assist the student in acquiring the necessary technical skills. In the senior year the student is encouraged to pursue his greatest areas of interest and thereby to begin to mature his creative vocabulary.

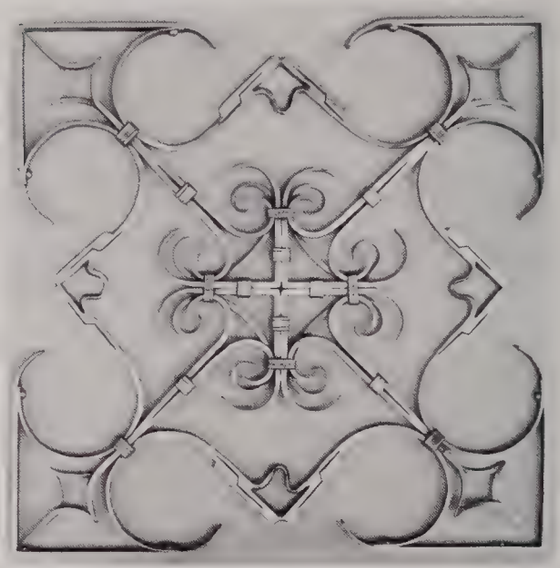
Each year the School of Art's senior class competes for the Rickert-Ziebold Trust Award, a cash award given to outstanding seniors majoring in any of the arts or crafts. Approximately $21,000 is divided among several graduating students each year. This award, perhaps the largest given in the nation to undergraduate art students, has assisted many young people to further their careers as artists.

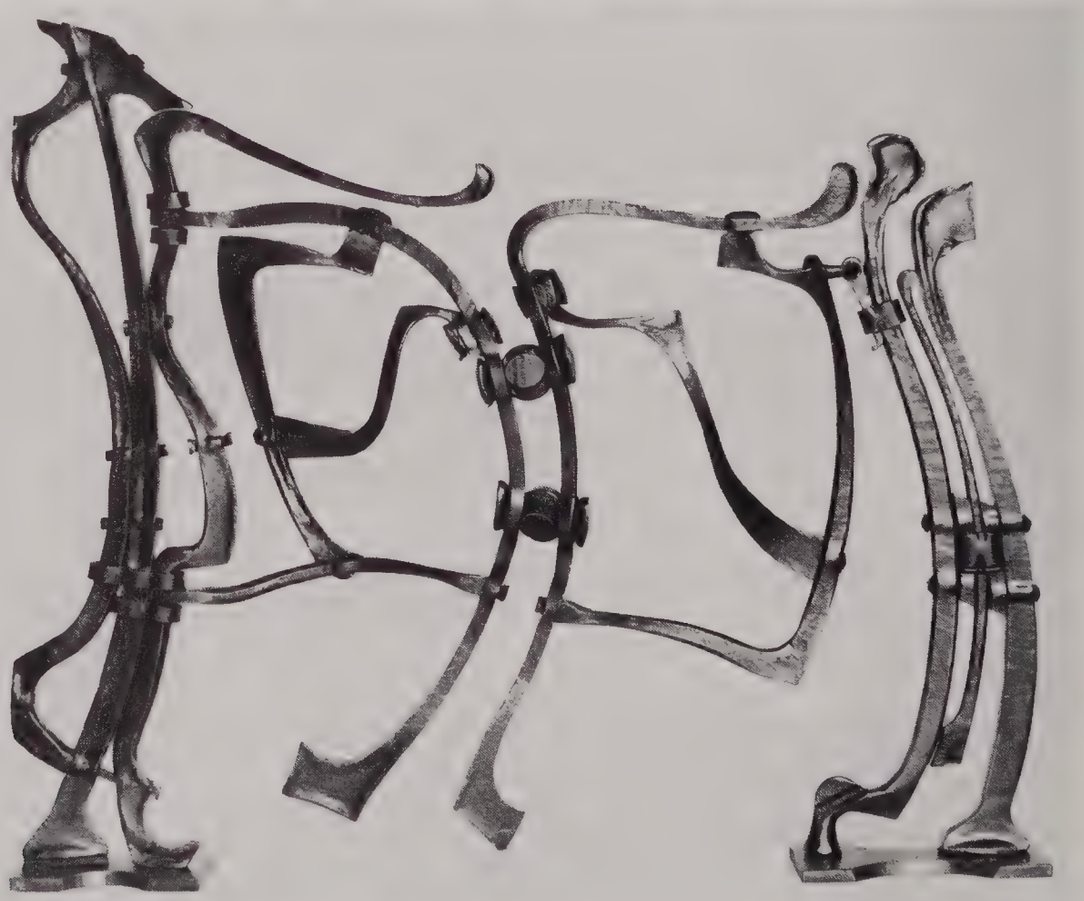
The two-year graduate program is an individualized study which emphasizes the esthetic development of the artist. Mechanical skills are treated only as a technical vocabulary for the artist to use to express his concepts and to further his art form. One unusual aspect of the graduate program at SIU-C is the research that faculty and students have pursued over the past decade. Recognized for results in Damascus steel and mokume-gane, the program has a history of successful investigation into historical metalsmithing techniques. However, technical research is encouraged only as it enhances the students' creative and intellectual growth.

The metalsmithing studios are well equipped and spacious. The large blacksmithing studio with its extensive power equipment is a unique facility in this country. Blacksmithing students use the studio to produce ornamental iron and sculpture, while jewelry and holloware students use it for tool production.

School of Art
Southern Illinois University
Carbondale, IL 62901
Telephone: (618) 453-2032
Brent Kington
Richard Mawdsley







Top: Bonnie Gwaltney, *Marine Series: Pin #2,* sterling brass, 3x1x3/4" **Center left:** Michelle Crespi, *Fold Up #3,* mokume-gane, kuromi-do, sterling silver; pressed through rolling mill, fabricated **Center right:** Scott Fredenburg, *Window Grille,* iron, 46x46" **Above:** Bernard Hosey, *Gate,* forged steel, 6x5'

The Portrait Jewel

A Yankee Revival of a European Art Form in Ivory

by Reid Smith

Graphic art and the jeweler's art have been allied on many occasions, in many ways. During the Renaissance the jeweler's bench was a common training ground for future painters, thus making precision and delicacy a prerequisite. Even now it is not uncommon for an established painter, such as Salvadore Dali, to design a set of jewels, thereby acknowledging the potential for expression in the jewelry medium. But aside from the one influencing the other, there is an area in art where graphic art can be included in the overall design of a jewel, or, to put it another way, where the jeweler's art can be included in the presentation of a two-dimensional picture. This is the portrait jewel, containing miniature representational images that are enameled, etched, painted or engraved. The concept, which originated in 16th-century Europe, has been alive for 500 years and has a contemporary application.

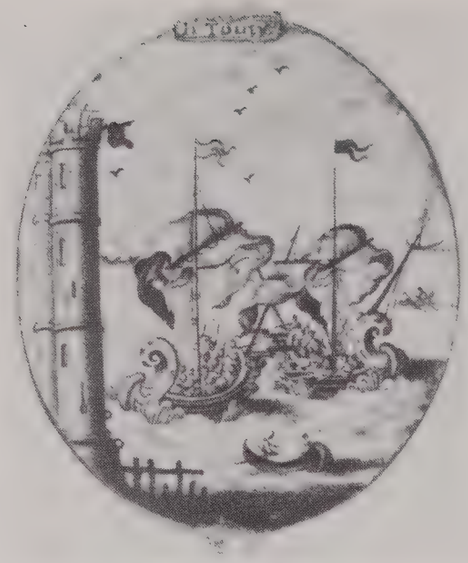
The pieces shown here represent the portrait jewel as it has been developed in Bellingham, Washington. They are examples of a contemporary collaborative effort between artist and jeweler, who conceived and designed them together. This relationship is reminiscent of what must have happened in Renaissance Europe between cameo carvers and goldsmiths in the making of jewels with cameo portraits. (However, it is interesting to note that a competitive spirit eventually prevailed, leading goldsmiths to create the enameled gold cameo.)

Of course, collaboration is not the only avenue for bringing together jewelers' skills with those of engravers, carvers and so on. There have also been those multitalented individuals who by themselves join a wide variety of art techniques in a single piece. One such artist was Nicolas Hilliard, who largely defined the portrait jewel in the late 16th and early 17th centuries while working in England. A good modern example would be René Lalique with his combination of ivory carving and enameled gold, as perfected in his *Orchid Comb* of 1903.

Representational art has always been one of the main design factors in jewelry: from early Egyptian inlaid pectorals of winged women and vultures, or Minoan repoussé pendants of hornets and goats, to 1st-century Roman cameos of rulers and 12th-century Byzantine cloisonnés of Saint George. But it was not until

Top left: English gold pendant with miniature portrait by Isaac Oliver, early 1600s, from *The Story of Jewelry* by Anderson Black, William Morrow, New York *Top right:* English gold pendant with portrait miniature by John Hoskins, mid-1600s, from *Jewellery Ancient to Modern* by R. H. Randall, et al., Viking Press, New York *Above: Ruby Green Tree Frog,* engraving by Gary Dorning, oil paint and mammoth ivory; jewelry by Reid Smith, fabricated with sterling silver, mammoth ivory and enamel on copper. Photo: Larry Hartford

French gold locket with miniature painted enamel of naval engagement on front by Jean Toutin, 1636, from *Jewellery Through 7000 Years*, edited by Hugh Tait, British Museum Publications Ltd., London *Top right: Louisiana Heron*, engraving by Kelly Mulford, oil paint and mammoth ivory, jewelry by Reid Smith, fabricated with sterling silver, manzanita wood and abalone shell inlaid. Photo: Larry Hartford



the beginning of the 16th-century that Europeans developed a realistic graphic technique to incorporate in jewelry.

At first came the spread of Byzantine cloisonné enameling as Syrian craftsmen went to France. Then, along with increased travel and communication, enameling took various turns, to champlevé and basse-taille. It was early in the 1500s that French craftsmen, with new skills, introduced the painting of enamels, which no longer required metal separations between colors in order to establish design. One of the earliest surviving pieces, dated about 1520, is a Flemish portrait in pendant form showing on one side the head of the Emperor Augustus and, on the reverse, his vision of the Virgin and Child on a sickle moon. The figures are in grisaille (white painted enamel on dark opaque ground) with gold details. Later, in the early 1600s, Jean Toutin (1578–1644) created a style of enameling that used a white opaque ground. He was apparently answering a demand for botanical design on smooth cases, such as housed watches and lockets. This method was very successful, and though no examples of his own work survive, many do from his workshops in Blois and Paris and especially ones by his son, Henry. Henry's earliest known piece is signed and dated 1636 and is a locket with three fine miniature painted enamels. On the cover is a naval battle. Inside is a mythological scene representing Diana and Actaeon, and on the back is a military siege with a helmeted figure on horseback in the foreground.

In the late 1600s, another possibility in painting enamels emerged in Spain, one that did not leave the picture exposed to wear or require a protective cover, namely *verre eglomisé*. This was painted directly onto the underside of rock crystal and used gold leaf for highlights, with a predominance of black enamel. Most of the subjects were typically devotional.

Meanwhile, in England during the late 1500s, the famous Hans Holbein, an artist and designer of jewelry, had developed a technique for painting miniatures on ivory or vellum and this was adopted by Nicolas Hilliard. Since Hilliard was a jeweler, he naturally set about making jewelry with his miniatures and by the early 1600s a fashion for "picture boxes" of this type, usually hung around the neck or pinned to the bodice, was established. It was not long before other artists, such as Isaac Oliver and John Hoskins, added their individual styles. During the reign of Elizabeth I, Hilliard became the first English-born artist to gain an appointment to the English court. He was subsequently commissioned to design and paint some of the landmark portrait jewels. One such piece is the *Heneage* or *Armada Jewel* of 1588, which contains a portrait of Queen Elizabeth within the locket. This jewel has two other pictures as well: one is a chased gold cameo profile of the Queen (on the front cover) and the other is in enamel, of the Ark tossed at sea. This jewel was given to Sir Thomas Heneage in recognition of his services to the Crown and represents a tradition that Queen Elizabeth brought to a peak. Another example of this period would be the *Lyte Jewel* of 1610, with a portrait of King James I by Hilliard. This jewel was given by the King to Thomas Lyte.

By 1750, and through the first half of the 19th-century, miniature portraits were done with a wide variety of techniques. There were enamels, watercolors, and oils done on copper, shell and ivory. The jewelry forms and the subjects were equally diverse. There were chatelaines, bracelets, pendants, lockets and rings with devotional, pastoral and personal themes. During this period, portrait jewels were made throughout Europe and America. They became an important part of the Russian heritage through the work of Peter Carl Fabergé. During the early 1900s, through 1915, the Fabergé organization made an abundance of nonwearable pieces incorporating portrait miniatures by the Russian court painter, Vassily Zuiev. Among these creations were the famed, imaginative Easter Eggs, such as the *Romanov Tercentenary Egg* of 1913, which carried 18 circular portraits of Romanov rulers. Another, the *Grisaille Egg* of 1914, has eight panels in grisaille enamel and translucent pink depicting the Muses. After Fabergé, the portrait jewel lost much of its popularity. But the 1970s saw an American revival of this ancient art.

This current American revival of the portrait jewel has depended first on the renaissance of the folk art of scrimshaw, as it was practiced by 19th-century Yankee whalers. About seven years ago this medium began to transcend its folk origins as trained artists gathered under the auspices of an up-and-coming scrimshaw jewelry business, Alaskan Silver and Ivory of Bellingham, Washington. Various types of optical devices were added that encouraged fine detail and shading. The more traditionally used colored inks were gradually replaced with oil paints. And so what originated as crude, hard-lined, black-and-white engraving became delicate, often full color, fine art with a strong focus on realism. As styles progressed, independence was needed and the freelance community of Bellingham ivory-engravers grew.

The second essential ingredient for this emergence of a modern portrait jewel has been the widespread demand for pictures of wildlife. In a world that is impoverished of cultural images based on common belief, esthetics based on nature come forward. Also, Western man is beginning to realize that wildlife is struggling to survive with an expanding human population. A consequence of this realization is a need to show an appreciation in art for the beauty and values inherent in nature. The subjects of 19th-century sailing ships and ethnic peoples have been in similar demand. These too can be seen as part of the movement establishing an appreciation of things that have almost disappeared before the onslaught of modern civilization, though of cultural rather than natural origin.

The techniques involved are, of course, specific to the individual styles. But generally, scrimshaw is made by filling successively engraved ivory depressions with black ink or oil paint, working from dark to light, using the white ivory background for light. Various kinds of ivory can be used; however, the reason that modern scrimshaw first became popular in the Pacific Northwest was partly because of its proximity to the source of old mammoth and mastodon tusks buried in Alaska.

Ivory of the North and Its Use in Jewelry

Ivory from Alaska has trickled down through the Pacific Northwest for a long time, in the form of prehistoric mammoth and mastodon tusks as well as walrus tusks. This trade in ivory is one reason why the renaissance of scrimshaw first happened in Bellingham, Washington.

One can tell that a mammoth tusk is the real thing, that is 10,000 or more years old, by the

Top left: The Grisaille Egg by Peter Carl Fabergé and workmaster Henrik Wigström, gold with eight panels of painted enamel by V. Zuiev, 1914, from *Fabergé, Court Jeweler to the Tsars* by G. von Habsburg-Lothringen and A. von Solodkoff, Rizzoli, New York *Top right: The Lyte Jewel*, English, with miniature portrait of King James I, by Nicolas Hilliard, ca. 1610, from *Jewellery Through 7000 Years*, edited by Hugh Tait, British Museum Publications, London *Below: Clown Fish*, engraving by Gary Dorning, oil paint on mammoth ivory; jewelry by Reid Smith, fabricated with sterling silver, abalone shell inlaid. Photo: Larry Hartford

degree to which it has disintegrated or been colored by the minerals of the earth. Disintegration starts with cracking in concentric and vertical rings, that is, rings radial in a cross-section. If the vertical cracks are open to the outside of the tusk, then the likelihood of mineral color (primarily browns and blues) is greater. If the ivory is of top quality, there will be no further breakdown. However, it is common for the ivory to turn chalky along these cracks, which will probably slowly infect the entire tusk when it has been in contact with the right elements for long enough. In other words, some tusks are too chalky for use.

The cutting of the large mammoth tusk is referred to as "shelling" and begins with a cross-section of desired length. This is usually cut in half as a radial going through the center. This cut will expose the angles of the concentric cracks. (The best saw for this work is the band saw with a ¼", six-teeth-to-the-inch blade.) The table can then be tilted to match that angle and the cut made by following the cracks naturally established by the aging of the material.

The shaping of cabochons with this ivory is done on a dry sanding disc with a heavy grit (60–40) to minimize heat. Overheating results in burning (white to brown in color) and makes the surface brittle for engraving. This can then be sanded down to 220 grit and finally polished with a medium-fine compound such as zam. Rouge should not be used, as it will permeate the grain.

One of the most exciting uses for mammoth ivory in jewelry is that of channel inlay. Ivory is soft enough to shape relatively quickly on a sanding disc and it comes in many colors, besides having a beautiful end-grain pattern. This makes it excellent for mosaics as well as for monochrome designs. Perhaps the most interesting color is the blue that is often found in the outer rind of the tusk. This tends to be somewhat flaky on the outside but can be sanded down to marblelike patterns with varying degrees of whiter ivory showing through from within.

Mammoth ivory is ideal because there is no question of whether it is from an endangered species or not; mammoths are long gone! Due to its age, it is very porous and care must be taken, especially when the surface area exceeds one square inch, not to expose it to

Below: Celestial Unicorn Box, engraving by Gary Dorning, oil paint on mammoth ivory; jewelry by Reid Smith, fabricated with sterling silver, mammoth ivory inlaid. Photo: Larry Hartford

extremes of humidity or temperature for too long. Otherwise it will readily expand and contract. One caution to take is to back the ivory with a flexible glue such as silicone rubber and combine this with a burnished bezel setting.

Another ivory commonly used in Bellingham is that from walrus tusks. This kind of ivory can be anywhere from hundreds of years old to fresh, as herds are still quite healthy and are legally harvested under annual restriction. The older tusks are marked by their color and many pieces are found in the form of artifacts, worked and used by Eskimo often 500 years ago. Generally, the more cracked the piece is, the more color there will be within, and these kinds of ivories are valued mostly by jewelers for cutting cabochons and for inlay. The fresh, whiter ivory is especially valued by engravers, as it can be polished whole, thus creating a large, long surface for a more involved composition.

Reid Smith is a jeweler-designer. He has been working in collaboration with the Bellingham freelance scrimshaw community for four years.

References

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Tait, Hugh, ed., *Jewelry Through 7000 Years*, London: British Museum Publications, 1976

Untracht, Oppi, *Colliers Encyclopedia*, Vol. 4, Crowell-Collier, 1970

Habsburg-Lothringen, G. von, and Solodkoff, A. von, *Fabergé: Court Jeweller to the Tsars*, New York: Rizzoli, 1979.

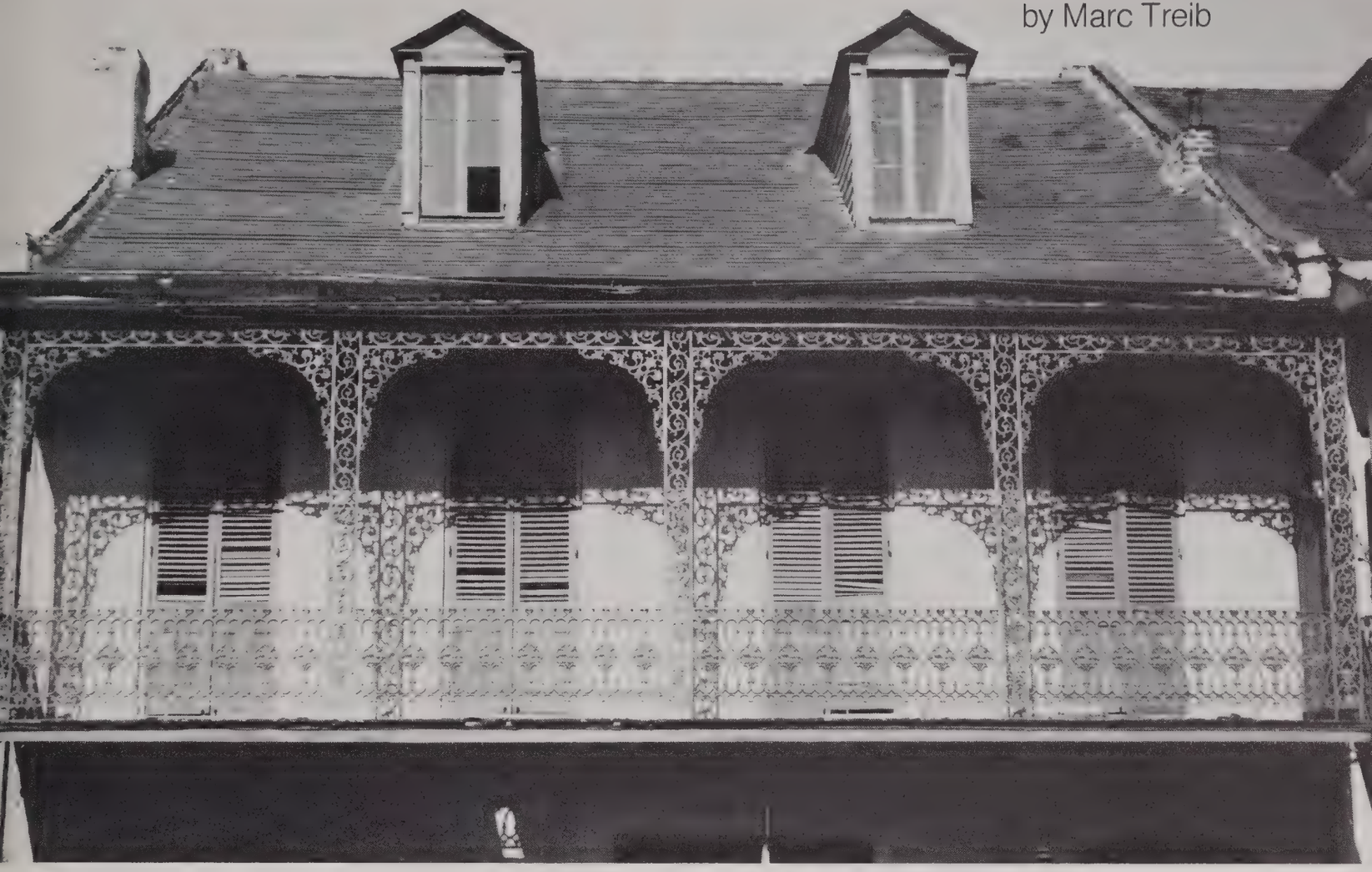
Sources of Supply

For custom scrimshaw, set or unset:
Ivory Guild Jewelry
1632 Marine Drive
Bellingham, WA 98225
Telephone: (206) 676-9508

For raw ivory, mammoth and fossil walrus:
Mello-Metal
1318 Bay Street
Bellingham, WA 98225
Telephone: (206) 734-8377

FERROUS SPACE: IRONWORK IN NEW ORLEANS

Text and photographs by Marc Treib



Ferrous metals have played a prominent role in the development of most cities, but it would be difficult to imagine an environment more dominated by the visual presence of iron than the "French Quarter" (Vieux Carrée) of New Orleans. As railings, door frames, balcony edging and fascias, iron has lent its esthetic to the physical fabric of New Orleans. Nowhere, however, is its density greater than the relatively small quadrangle within which the city first put down its imprint. Iron has a particular presence in the Quarter because for many, if not most, of the buildings it comprises the perceptible facade. Brick-between-posts or wooden construction of the buildings makes the rooms and courts, but it is iron which presents architecture's face to the street.

New Orleanian iron, whether cast or wrought, is a treatment. It is structural only in a limited sense; as a volumetric and sculptured presence it is more pervasive. The volatile combination of light and metal are the elements from which the architectural ensemble is formed. Iron is the solid; space is the void: a dialectic binds each to the presence of the other. Each depends on its opposite, its negative, for definition. In the end, iron and space merge and yet are simultaneously distinguished—an existential stand-off that creates the sculptured voids that anchor the building to the life of the street.

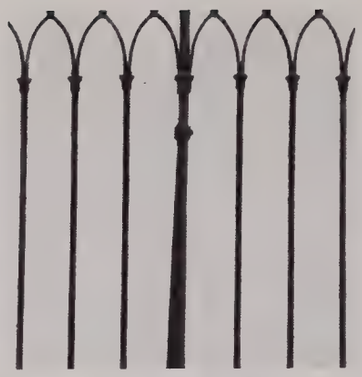
Iron also creates that life, though its use is almost always restricted to the ornamental. The structure of the typical balcony and galleries—necessary to shade the rooms as well as create those intermediate environmental zones roofed and shaded, but open to the breezes—is a simple affair of iron sheafs or pipe columns. The floors are supported below by metal straps or perhaps even wood alone.

The seeming miles of cast iron are, for the most part, merely applied to this primary structural frame. Around the fascia, along the lower edge of the balcony, up the columns, and along the railings the iron ornament creeps like ferrous ivy. In the corners, gussets more or less triangular in nature fill the gap and effect a transition between the vertical and the horizontal planes. As a totality, these fronts do not read as a collage of pieces but as a single unit —the whole is greater than the sum of its parts. The resulting galleries, a quasi-architecture of their own, read as filigreed blocks; solid yet void; teasing in their simultaneous catching and reflectance of light. Rather than ornamented structure, here is structured ornament. Rather than ornamented construction, iron constructs ornament.

For every solid piece of iron, there is a virtual, nonidentical twin that exists on the surface upon which its shadows fall. Each facade is enlivened by this continual play of light and shadow, the dense and virtual iron that dances and changes with the movement of the sun, through the day and through the year. The Quarter is not oriented to the compass points; it was made to address the river. Major streets like Chartres and Royal are not exactly north-south nor east-west, and, as a result, the sun seems to fall on every facade at some time of the day or year. Every room requests shade to prevent heat build-up in its interior; every plane of iron casts its shadows, does its duty, and is all the more visually brilliant for it.

From the interior or from the balcony, iron becomes gauze or veil. The ironwork is the filmy screen between the street and the building, the filter which diffuses the view, creating both mystery and privacy. Sitting on the balconies the view is fragmented and framed. Rarely does one get a clear shot across the street or down the veranda. Instead the iron or its shadows, the refraction of light around the shapes and forms, the dancing of reflection on a rare still-polished surface or newly painted one, all work to diffuse the vista.

The earliest ironwork in New Orleans was wrought. The colonists arriving under aristocratic patronage brought with them the metallic necessities for starting afresh in a wilderness. Functioning pieces like hinges and fastenings were probably foremost, but ornament was also a necessity. Ornament distinguishes living from mere existence. There are still wrought iron pieces around the Quarter, some newer, some old, but the face one sees is made up with cast iron. Most of the earliest cast iron came from outside New Orleans, a good deal of it from



Philadelphia, according to *Cast Iron and the Crescent City,* an exhibition catalog by Ann M. Masson and Lydia Owen published by the Gallier House in 1975. With the production advantages of casting, the city's face changed in a relatively short period of time; the galleries were transformed. Iron could be bought, in effect, by the yard, and, like lace trim, could be used to edge every available surface. From simple bars to the elaborate palmlike motifs used in many areas such as Royal Street, the railings became more densely textured. But cast iron of this sort is essentially one sided, with relief only on the front while flat on the back. The relief, of course, was given to the street, to the light. In its extreme, cast iron became not only the decoration of the architecture but an architectural presence in itself. The celebrated cornstalk fence exudes a presence stronger than the building behind it (The Cornstalk Fence Hotel). With at least one sister fence up-river in the Garden District, the cornstalk fence is still a landmark and point of interest in itself.

The popularity of ornamental cast iron peaked in the middle of the 19th century. The prevailing popular taste called for it; architectural style required it; and the bumper cotton crops paid for it. Unlike labor intensive wrought iron, where each piece is a unique hand-crafted work, cast iron is a child of mass production. The complicated master gave birth to scores of offspring, reproducing almost any motif or replicating any material. As Masson and Owen write: "By mid-century, virtually every element formerly made of wood or wrought iron was being manufactured (in cast iron): tie-ends, stairs, rosettes, cornices, ventilators, hardware, downspout boots. These were available in different designs and builders could choose combinations to suit their taste. They were decorative, inexpensive, and durable. Highly resistant to weathering if kept painted, cast iron elements were favored for many exterior details." (page 33)

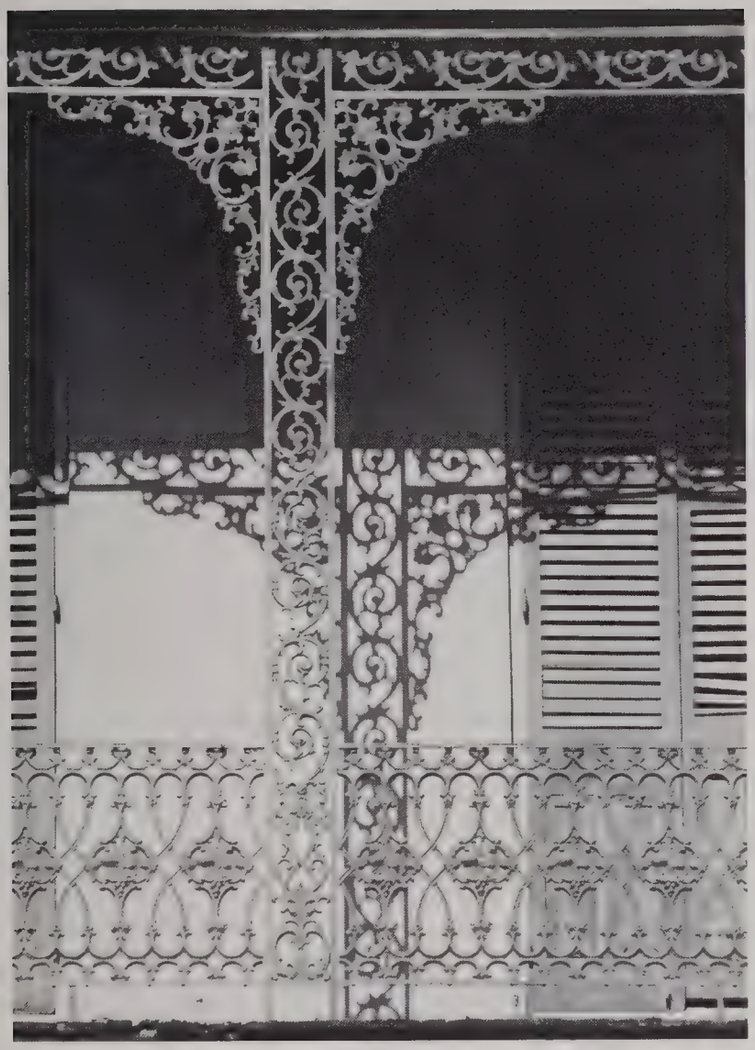
Original designs were produced locally, but many, if not most of the patterns came from the catalogs of out-of-town manufacturers, particularly those of the northeast. Some firms like Wood and Perot of Philadelphia were even represented by local distributors. The pieces that ornamented the ever-growing number of verandahs in districts like the French Quarter and the Garden District came in an amazing number of patterns. "An 1859 Wood, Miltenberger and Company advertisement states that '200 varieties of Gallery Railings' and '50 (patterns) for verandahs' were available. Reflecting popular and decorative and historical styles, railings could be purchased in Gothic, Classical and geometric patterns. The naturalistic designs were the most popular. Many railings are composed of roses, fuchsias and morning glories, acorns and oak leaves, fruit and trailing vines." (page 25)

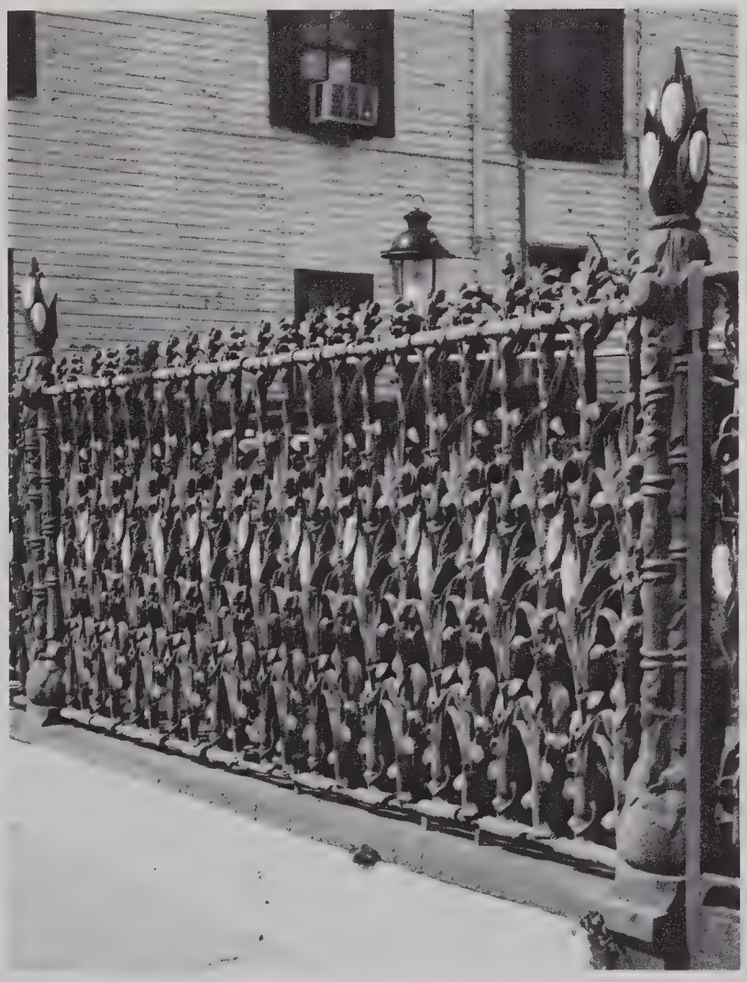
Cast iron, though highly durable when compared to materials like wood, still required painting for protection against rust and apparently a "soft, bronze green" was one of the more popular hues. Today, flat, matt black predominates, although a steely light gray and that soft green still survive.

The development of steel technology undermined the use of cast iron as a structural material. More ductile, stronger and possessing a higher melting point, steel rapidly relegated cast iron into the realm of the ornamental. But it was the changes in architectural taste in materials and styles that undermined even the predominance of the filigreed iron cage.

The French Quarter of New Orleans enjoys an international reputation for its excellent cuisine, its image and ambience: a city entirely distinct. The unique mixture of Spanish, French and American architectural efforts and effects is without peer in the United States—this image and effect are created substantially by the pervasive presence of iron. The food is certainly good; the aroma of gumbo spills out onto the streets in certain places, while the sound of jazz spills out in others. But visually the French Quarter of New Orleans is dominated by the taste of iron, a rich architectural cuisine guaranteed to please the most discriminating palate.

Marc Treib is Professor of Architecture at the University of California, Berkeley. He is a frequent contributor to architecture and design journals and a freelance graphic designer.





The Gibbon Salt

Silver-gilt and crystal, London, 1576
Height: 30 cm

Collection of the Worshipful Company of Goldsmiths of London

Photo courtesy the Worshipful Company of Goldsmiths

In the past there was little appreciation for antiques, and English silver objects that have survived from before the 18th century have done so almost by accident. Once a design was out of fashion, the piece was in line for the melting pot to help to pay for some new creation. Occasionally, however, there is evidence that a piece of no particular sentimental or historical significance, has survived purely because of its quality. One such example is the Gibbon Salt in the collection of the Worshipful Company of Goldsmiths' of London.

Made in 1576 by an unknown goldsmith who used the mark of three trefoils within an inverted trefoil, the standing salt came into the possession of Simon Gibbon, a Cheapside goldsmith, in 1632. As soon as the Wardens of the Goldsmiths' Company reached his premises during a traditional St. Bartholomew's Eve search for substandard wares, Gibbon was on the doorstep with promises of "a free guift of his love" for the Company. Graciously accepted even though an obvious bribe to discourage an examination of his stock, the standing salt was named after him and has formed part of a group of only four pieces of Benefactors' Plate that has remained at Goldsmiths' Hall ever since. It has survived major reductions in the plate collections, particularly in 1637, to pay enforced loans to the King, and also for the rebuilding of Goldsmiths' Hall, and in 1667 after the Great Fire of London when even pieces completed only two years earlier were consigned to the melting pot. Finally in 1711, in a desperate attempt to recoup the Company's finances, money from the sale of plate was used to buy tickets in a government lottery, with disastrous consequences. To have survived such depredations is an indication of the high esteem with which the Gibbon Salt was regarded.

The standing salt played an important social function by being placed in front of the host on the top table. Travellers who sought a meal and a roof over their heads could rely on the hospitality of the local manor where they could bed down on the floor of the great hall having partaken in the evening meal. The lord of the manor would be indicated by the position of the standing salt, his important guests would be sitting "above the salt," and all the rest in the hall were therefore "below the salt."

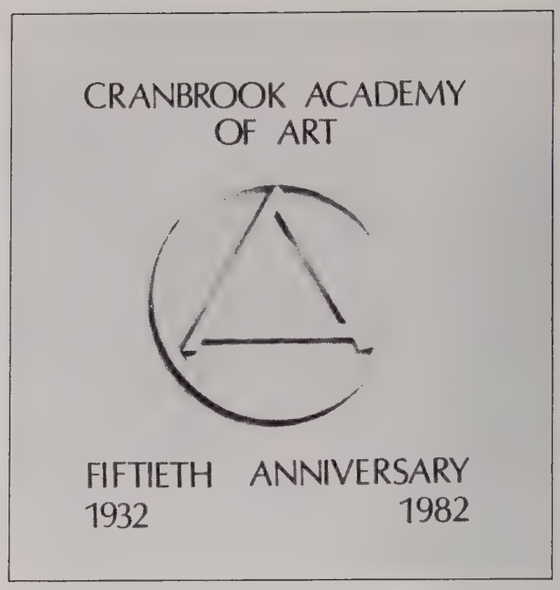
Undoubtedly the finest example of a small group of standing salts of architectural form, the concealed bowl for the salt is supported by a figure of Neptune enclosed within a rock crystal cylinder of pentagonal section, representing gushing water. This in turn stands on a flattened dome, chased with masks, fruit and flowers, arising from a square base embellished with a stamped ovolo decoration. Around the central cylinder are four free-standing Ionic columns which terminate as small cupolas on the cover. The centre of the domed cover, which echoes the decoration of the base, is surmounted by an urn finial decorated with traditional festoons of flowers and fruit. This is topped by three scroll brackets supporting a spice-box which is in turn surmounted by a small vase. The gilding has been renewed.

—Susan Hare, *Librarian to the Worshipful Company of Goldsmiths of London*

Master Metalsmith

Richard Thomas

by Julie Hall



This is the second of a two-part article

Julie Hall Because there were so few precedents in organizing a metalsmithing facility, you must have had to create specific techniques or tools that would facilitate the production of fine metalwork as your program grew at Cranbrook. Do you want to mention any particular technical breakthroughs that occurred?

Richard Thomas Because we were rather insular, it became necessary for us to find our own solutions. In many instances, we found that we were simply rediscovering ancient techniques! This phenomenon occurred simply because metalsmiths depend more than any other craftsmen upon an understanding of the mechanics of taking advantage of fundamental and immutable physical laws.

It was during the 1950s and 60s that the most significant innovations came about in our studio. Among other things, we could not find adequate stakes in this country. We could buy standard "T" and vertical stakes, but these were limiting. We hit upon the idea of making our own patterns and finally arrived at a group of five stakes which were, and still are, ideally suited for the individual craftsman and increase the possibilities for large-scale work considerably.

In addition to the stakes, I devised, quite by accident, the Masonite Die Process, which takes advantage of the tenacity of metal. This differs from the usual die proces in that there are no male and female dies. The masonite die is, rather, an open, nonconforming die which permits work on the interior surface. The shape of the hammer and the flow itself determines the interior dimensions of the object and shapes the outer surface to produce forms that can't be made by any other means, except by extremely costly male and female dies.

Julie Hall Did you discover any other technical solutions to problems inherent in the process of metalsmithing?

Richard Thomas At about the same time I also devised a fire scale preventative which we call the Ring-a-Ding. The Ring-a-Ding is based upon a wetting agent which survives through the annealing range and permits boracic acid to remain in contact with the metal. This was a major breakthrough for us and we haven't had a fire scale in the shop for 25 or 30 years.

Another technical breakthrough was the Welsh Pony, a quick method of coloring copper-based alloys. We also came upon the Commercial Photo-engraved Impression Transfer Process, which is a method of making three-dimensional castings out of two-dimensional drawings. (See the end of this article for specifics on the above techniques.)

Julie Hall Were all these things happening during the 50s and 60s?

Richard Thomas Yes, that was an explosive period in metalsmithing throughout the country. Another very important thing —and I can't really stress the importance of this too much—was that as a private institution with limited funds every department at Cranbrook was hampered by the fact that we could not be competitive with other institutions. So, another happy accident came about. One evening I was discussing metalsmithing with C. Allen Harlan, a prominent man in the neighborhood. He had long supported our studio and had commissioned and bought work. So, I proposed to him that I would teach a class one night a week during the academic year if he would select 14 of his friends to participate. I further stipulated that there would be no fees involved. The next week he and his friends appeared, and we began a tradition that was to last for seven years. We called ourselves "The Harchers," and we got along very well. These men learned metalsmithing and contributed, freely, graciously and without solicitation, goods, services and machines for our shop.

By becoming familiar with the functions of the shop and being active professionally in their own fields, they began to notice around them the things that would be helpful to us, and, as a result, they would frequently combine resources to buy a machine and to give it to us. Many of these things they gave to me personally to be used in the shop. In fact, with the monies that became available through The Harchers, the Cranbrook students were able to go to Europe.

The Harchers afforded our studio many useful connections with people who were not involved in the field but who became a very appreciative audience. After someone has raised a vessel in metal, never again will they pass by metalwork casually. They have a sense of appreciation and an understanding of the work of a metalsmith, of an artist, any artist. It becomes much more important to them.

Julie Hall So, you feel that this concept of offering metalsmithing to members of the community is valid on many levels.

Richard Thomas Absolutely. In addition to the goods, services and monies that The Harchers gave us, they provided another avenue of communication and perhaps an awareness of the essential responsibilities of the community in which we find ourselves. These men still serve many valuable functions to the students—jobs, references and commissions. Another

thing has grown out of our relationship with The Harchers. It has become a custom when I am invited to go to another campus to speak for me to endorse the honorarium check back to the institution with the stipulation that they establish a "Harchers" group on campus. Some institutions have done this and one of them, particularly El Camino College in California, has an organization called "Harchers West," which is doing for their department exactly what our Harchers did here. There are two or three cells like this throughout the country attempting to establish a corps of Harchers.

Julie Hall After so many years of teaching, do you think that you could generalize about the special aptitudes or talents of metalsmiths?

Richard Thomas Over many years I have asked my students, "When did you first decide that you wanted to become a metalsmith?" Almost invariably they point to a particular accident or incident in their lives. Sometime between the ages of six and 10 for some reason most of them had an opportunity to make an object and they decided right then that that was what they wanted to do for the rest of their lives. For example, one student was fascinated with this question and brought in an example of a thing he had made when he was nine years old. It was a slingshot with a black walnut carved handle that would fit a nine year old's hand, cast aluminum prong and a shaped leather projectile holder. Everything was polished, clean and beautifully put together. I think that this exemplifies the peculiar nature of metalsmiths. They are essentially orderly, meticulous and extremely demanding of themselves. They also tend to be rather conservative. It is amusing to see instances of those who try to push the boundaries outward, utilizing input from the graphic arts, sculpture or other areas of contemporary art. Somehow it falls short. It's a matter of scale; it's a matter of surface. Of course, one of the great complications confronting the metalsmith is that contained within the field are distinct occupations: the enamelist, raiser, jeweler, stonesetter. For example, for an engraver to become truly proficient, it is necessary to work every day. I know one engraver who takes his tools with him on vacations and makes a few slashes each day; otherwise he will lose his touch. Within the field of metalsmithing there are so damn many occupations that one must narrow down in order to develop a proficiency in a particular area. I think that this is one of the reasons that mine is essentially a conservative field and that any attempt to break out of it—like some of the more radical esthetic directions that have taken place in fiber and ceramics—are not truly appropriate to metalwork's basic perimeters. Fiber and clay don't have the peculiar limitations that metal has. They don't have the intrinsic value of metal, for example, which is always an inhibiting factor.

Julie Hall Are there any really innovative techniques which people are exploring today in metal?

Richard Thomas There have been some minor breakthroughs, but I don't think that there will be any of great significance. For example, currently there are experimentations with new alloys and new elements that ordinarily have not been used, such as titanium, tantalum, columbium and nobium. There have been experiments with these, but they essentially deal with surface coloration changes. They don't have a great deal to do with form. I don't think that actual material changes are likely.

Sterling was first compounded in the 13th century and sterling, being 925 out of 1,000 parts silver, has been found to be the ideal material to work. Sterling has survived all that time, and with all the efforts to find substitutes none has ever been found. It was felt at one time that aluminum (when it was a rare material) would be a valuable asset to the metalsmith. But by experience we found aluminum is, for our purpose, an inferior material. The resurgence of interest in working with iron and steel—forging, blacksmithing—is a good sign, because now it is possible for people with an esthetic sensitivity to impose that esthetic upon reluctant material. It's going very well. The blacksmiths are now emerging beyond their traditional status of functional object makers.

Oh, that's another thing that I would like to speak about. Fortunately, since we first started at Cranbrook there have been written theses. I have kept copies of all theses, which have indeed become a very valuable reference source for us here. All the departments at Cranbrook have copies of these theses in the library, but I also have the students make a second copy for me, which I buy from them and maintain as a departmental resource. We have also published abstracts from all these theses from 1948–1979, and the papers have become extremely valuable as research sources for people writing books, research papers, etc. Our theses are available through interlibrary loans, if anyone interested in metalsmithing wants them.

Julie Hall In summary, out of your experience of the past 35 years, how would you appraise your field—changes that have come about, potential for future inquiry, continuity of the field traditions and any other observations you feel to be appropriate?

Richard Thomas The active people in the field have demonstrated a remarkable capacity for innovative and bold conceptual attack which has run on a parallel course with the burst of creative energy that occurred in all fields of art in the late 1940s. If our critics do not agree with our definition of progress, they have failed to properly investigate the peculiar nature—the curious demands—of our medium.

Metalsmiths are most positively conditioned by the materials and tools with which they work. To be successful, one must concede a state of reverence for the metal and for the tools required for its manipulation. It is as inappropriate to smoke a cigar in a cathedral as it is to abuse precious metal with an ill-chosen tool.

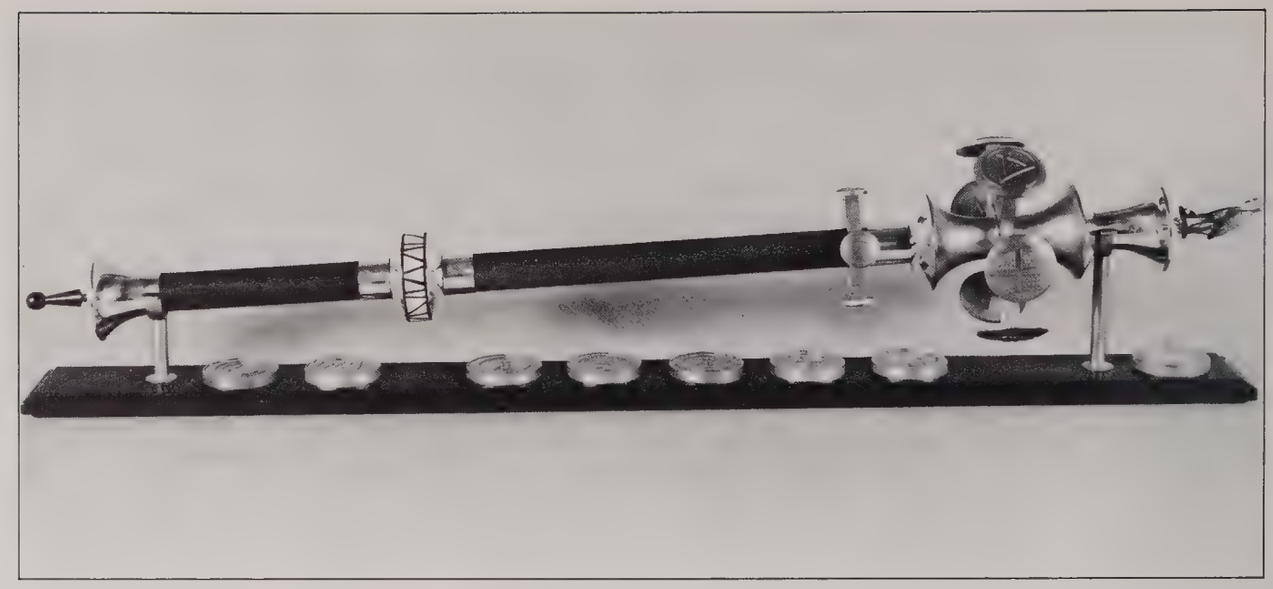
Because I had not been trained as a metalsmith, I was particularly fortunate to find myself in an enlightened community at Cranbrook, where the setting was conducive to freedom of expression. The contrived controversy which indicts the metalsmith as a lower form of life eludes me. As an artist, I acquired an M.F.A. in painting under the whip of Zoltan Sepeshy, a raging curmudgeon, a superb painter and a communicator of possibility, wit and subtlety. I learned that painting was difficult and very satisfying, and my initial attempts with metal offered an equal option for flight of concept. When I dropped the brush and took up the hammer, I remained the same person.

As to the future, the new bright-eyed and eager young people now entering the field are bringing an expansive intelligence, an optimism and a vastly improved awareness of the technical-mechanical aspect of the field. So equipped, they will continue the inquiries of materials, tools and concepts because, if for no other reason (as has always been true of the artist), there is no other choice.

(continued)

Julie Hall is the author of *Tradition and Change: The New American Craftsman.* Dutton. 1977. An avid collector of folk art, she has been a consultant to several museums and has curated many exhibitions on contemporary crafts and American folk art.

Right: *Academic Mace,* Cranbrook Educational Community, 1979



Cranbrook Innovations in Metalsmithing Techniques

Stakes

When I began my inquiry into raising techniques, the sources of raising hammers and stakes were limited to a few companies with a line of tools for "art metal." Because we had limited foundry facilities at that time, I found a commercial gray iron foundry willing to cast prototypes of larger stakes for making large objects. Now, after years of modification of the original patterns, which were carved in mahogany, we have in production a series of stakes which suffices for most contingencies.

The stakes vary in size, weight and function. The largest is a raising "T" weighing 65 pounds. Two raising and planishing "Ts" weigh 42 pounds each and two vise-held stakes, a cow's tongue and a "V," 22 pounds apiece. We have abandoned casting vertical stakes and hammerheads because these are now readily available through commercial sources. Recently we have resumed casting a single-purpose swaging stake and a remarkable universal stake holder, first devised by Tom Bambas of Central Michigan when he was a student here.

Because heavy, rough castings are difficult to finish properly, we set up a "production line" each spring to grind, scrape and polish the tools, and each graduate (if he chooses) leaves the Gray Submarine with his own collection. I would emphasize that the stakes that have been described are not *available for sale to people not currently enrolled or not graduates of Cranbrook.*

Most industrial areas maintain gray iron foundries and most foundries are pleased to assist in the development of adequate patterns for casting. The forms are simple and do not require match plates. Should you make your own patterns and proceed with castings, do specify the alloy that we currently order—95% gray iron and 5% nickel. This alloy is vastly superior to the original gray iron for its density, surface toughness and luster.

Masonite Die Process

This is a method of sinking metal into nonconforming dies. The dies are constructed of laminated wood faced with masonite. The ease and simplicity of making the negative volumes is in contrast with classic male-female dies which require highly sophisticated machinery operated by skilled technicians. The process consists of approaching the limits of elasticity of sheet metal while it is clamped in position over a negative volume. The metal conforms only in plane. The form is freely achieved by striking with a broad-faced hammer (the "male" factor) while the unresisting negative volume (the "female" factor) limits the lateral effect of the blow. The depth of the sink is conditioned only by the tenacity of the metal and the observations of the sinker. Mirror images of two or more die-formed pieces may be joined by soldering, riveting the flanges, etc., to produce three-dimensional forms that could not be devised in any other economical manner. Dies may also be quickly and easily made to produce curved planes, multiple (primary and secondary sinking) forms, deep and shallow halves and other combinations.

Welsh Pony

Coloration of copper-based alloys can be achieved in a variety of ways, but most commercial compounds as well as the usual formulae produce a flat surface color that does not have the character of naturally aged metal.

I observed that "Eucleen" (a proprietary compound developed by the Eutectic Corporation for cleaning metal surfaces prior to welding or soldering) had a uniform light etching effect upon copper alloys. By mixing a wetting agent, Aerosol O.T. 100% (Solid), with water and Eucleen and adding copper salts to the mixture to make a thick slurry which could be applied to the metal surface with a brush, it is possible to produce an encrustation of verdigris typical of that acquired by bronzes after long exposure to sulphur-bearing atmosphere. Apparently, the nitric acid in Eucleen attacks the metal surface and permits the entry of the copper salts into the surface creating a bond that closely resembles naturally formed verdigris. The copper salts that have been employed are copper sulphate, copper nitrate and cupric oxide.

The green color produced can be further enhanced by exposing the surface to a fuming bath of ordinary household ammonia in a sealed tent. I find a 10 gallon stainless steel container with a cover to be ideal for the fuming tent. The ammonia will produce an intense blue color which may be degraded to green with exposure to moderate heat. After an appropriate color is achieved, one may wax the surface with a commercial noncleaning wax. The mixture will produce an adequate verdigris encrustation within 24 hours.

I have not given the precise formula because I prefer to mix the ingredients for the specific requirement of the object to be colored. A typical mixture is as follows:

1 part Aerosol O.T. 100% (Solid)
4 parts water
6 parts Eucleen
4 parts copper sulphate
(Copper nitrate and cupric oxide may be used in place of the copper sulphate or small quantities of both may be added for color differentials.)

Water may be added to the paste for successive thin applications.

Eucleen is a product of the Euctectic Corporation which maintains warehouses in most cities.

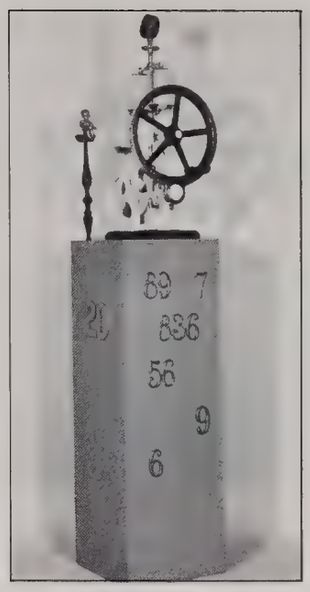
Aerosol O.T. 100% (Solid) is a product of the American Cyanamid Company, Wayne, New Jersey.

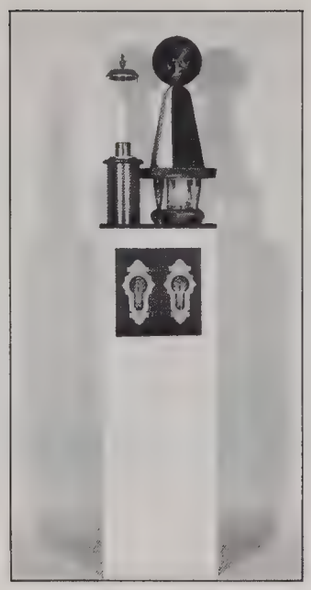
Commercial Photoengraved Impression Transfer Process

This process consists of reducing (or enlarging) a black-and-white drawing on high-contrast film and then having a commercial photoengraver make a zinc or magnesium plate of the original drawing. (The photoengraver may work directly with the drawing.) The resultant plate, which should "read wrong on metal"—a mirror image of the original, is then embossed on sheet wax. The plate, saran wrap "parting agent" and wax sheet are sandwiched between wetted leather plates and placed between two wooden or steel plates and the entire assembly compressed in a vise or screw press. The embossed wax may be welded to succeeding wax plates to add thickness; the wax plate may be warmed and warped into domed form or made to conform to compound curves. It may be further worked by direct carving or piercing.

A significant advantage of the process lies in the potential for remarkable detail. Photoengraved copper plates made from one's own drawings offer excellent decrease in detailed cell structures for enamel, niello or oxidizing enhancement.

Right: *Construction 20,* 1975
Center: *Construction 37,* 1975
Far right: Design for Medal, Cranbrook Academy of Art, 1981





Ring-a-Ding Fire Scale Preventative for Sterling and Gold

Quite by accident, I compounded a scale preventative by observing the capacity for a commercial surface active agent, Aerosol O.T. 100% (Solid), to retain its unique qualities through the normal annealing ranges. We have always known that Boracic acid would inhibit fire scale, but that it, in combination with water or alcohol, had a tendency to flake off the metal surface at heat. The aerosol combines readily with powdered Boracic acid and the compound adheres (fits) to the object to be protected.

The formula and directions for use are as follows:

Ingredients:

12 oz. Aerosol O.T. 100% (Solid) (Surface Active Agent)

(Caution: Concentrate causes eye irritation. If contacted, flush with water for 15 minutes and seek medical attention.)

48 oz. Boracic Acid (Powdered) (Boric Acid) (3 lbs.)

32 oz. Water (1 qt.)

Directions for Mixing:

1. Cut Aerosol into small pieces; immerse in 32 oz. (1 qt.) water and allow to stand until solids are reduced to gelatinous mass (approximately 18 hours).

2. Add Aerosol mix to Boracic Acid. Mix well.

3. Add water to Boracic Acid and Aerosol mix to make a thick slurry.

To Use:

Dip sterling to be annealed into slurry (Ring-a-Ding) and drain.

Proceed to heat to annealing range. No preliminary drying is necessary.

The mix will adhere to metal surfaces through annealing range. If flaking occurs, the slurry is too thick and should be thinned with water.

The Aerosol tends to disperse the boracic acid—the scale-preventing agent—over the entire heated surface and will protect against "fire scale" formation.

After annealing, dip in pickle in the usual manner. If any residual Ring-a-Ding remains on the metal, it may be flushed away with hot water.

For protecting metal from fire scale during soldering sequences, paint the metal with Ring-a-Ding to within 1/4" of join lines. Allow to dry. Apply flux and proceed with soldering.

The preventative is not a flux, and it may combine with flux to inhibit sound soldering sequence.

The fuming from the solution is nontoxic.

Aerosol O.T. 100% (Solid) is a product of the American Cyanamid Company, Wayne, New Jersey.

Ibushi

Ibushi is a classic Japanese technique for surface coloration made by exposing a form to the thick oily smoke of a smudge fire of pine needles and dried leaves. In the heat of the fire and the depositions of the complex by-products a layer of color may be built up on the surface of the metal, ranging from straw through a deep, rich black. The process may be stopped at any time a desired color is achieved. The surface may be further modified by increasing the heat on certain parts which produces the rich hues of fire color. This color which is normally fugitive may be made permanent by "glazing" the surface with further depositions of carbon.

After observing the process, it occurred to me that the pine needles and dried leaves routine was effective, but choresome, noisome and unduly primitive, and that the same effect could be achieved by warming a thin film of oil in an oxidizing flame from an annealing torch. (This method has been, of course, used for many years by workers in steel who protected their products from rust by burning off the volatile agent in linseed oil leaving a thin, brownish protective coating.) I found that linseed oil produced a tacky surface and that the color posibilities were limited. So I tried highly refined cooking oils and found that peanut oil provided the most pleasing color residual. The method of application is important. Place a few drops of oil on one palm, then rub the palms briskly to spread a thin film on both hands. By "stroking" the vessel to be colored, covering all surfaces, the piece is prepared for the flame.

A large yellow flame is employed to drive off the volatile portions of the oil. The process may be repeated as long as one likes, each coating and firing will descend the color scale to black. After a satisfactory color has been achieved, the surface may be waxed and buffed lightly with a hand-held soft cloth. The final surface is remarkably abrasion resistant. Significant differences in the final surface may be enhanced by applying the oil to polished abraded or blasted surfaces and by removing (in process) some depositions and then applying uniform coatings, permitting the underlying thinner depositions to glow through.

Distressed Metal

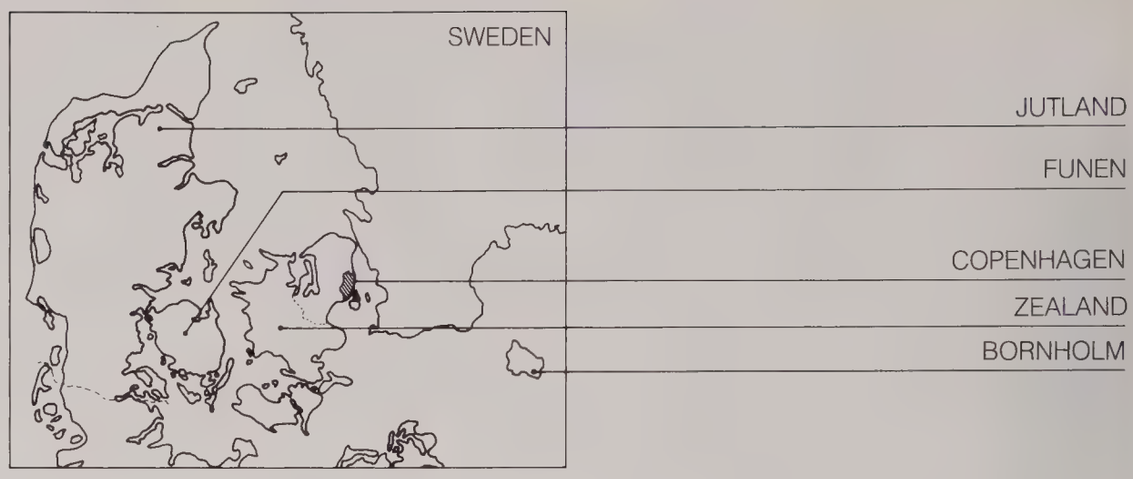
We have coined this term for a surface embellishing technique which historically has been practiced by many metalsmiths. Evidence exists that suggests the process was used (with variations) by the Incas, Scandanavians, Japanese, Chinese and certain European armorers. It is a delightful release from the usual overly meticulous care that most of us demand of ourselves, for the process consists essentially of beating the hell out of a metal surface with a sadly mutilated hammer. (I frequently assign the process as a problem to people who have come to the overwhelming confrontation that they may never quite achieve perfection.)

To produce the desired effect, one chooses an old hammer (preferably a cast planishing hammer) and literally destroys its working face by drilling various sized holes in it. The mutilation may also be achieved by hammering bits of very coarse carborundum (or old diamonds); by filing or attacking the surface with stone hand piece tools. One should test the mark-off by striking a piece of lead to observe the embossed pattern. When a satisfactory pattern has been made, one proceeds to use the hammer as a planishing tool—distributing the pattern uniformly over the entire surface. This surface is in itself pleasing, particularly after suitable coloring agents are applied. Highlights may be struck, leaving matted color in the depressions. A preferred treatment may be to clean the surface, apply flux and then carefully stick feed hard solder at heat uniformly over the entire surface (this would, of course, only be applicable to vessels of copper-based alloys.) By filing the solder off the high points and then carefully planishing the object with a highly polished hammer, a surface consisting of the parent metal and the residual silver solder, a pleasing mottled surface will remain. By treating the surface with chemical colorants, a contrasting pattern will emerge because of the differentials in the chemical activity of the metals.

A Metalsmith's Guide to Denmark

by Jan Lohmann

Introduction by John Vedel-Rieper



DENMARK

This is a continuing series of metalsmith's guides to cities, regions and museums throughout the world. The purpose of these guides is to give those interested in viewing metalwork during their travels an introduction to the treasures and resources, both accessible and hidden, of a certain place. The tours also document history and tradition in the field of metalwork.

Metalsmith *magazine encourages submissions of ideas for these guides. The tours should focus on a single location and be illustrated with maps, line drawings and photographs whenever possible. Metalwork can be found all around us in both urban and rural environments. No place is too remote to mention — an exquisite bronze bust in a hotel lobby, a certain iron grill, knives in a fishing tackle store. Here is a chance to share your favorite places and works with others. Send submissions to: Sarah Bodine, Editor, Metalsmith, 35 West 84th Street, New York, NY 10024.*

The castle *havn* (in Nordic *høfn)* or harbor was erected in the middle of the 12th century. It became a strong Nordic center of commerce and was called *København (Kaupmanna høfn),* the merchants' harbor. The City of Copenhagen, since 1443 the capital of Denmark, has a coat of arms showing three towers set into the waves of the Baltic Sea, which was also a hallmark in any fine piece of silver for generations indicating a fineness of 0.830. The silver designs of today are made of sterling, which has a fineness of 0.925, and the towers of Copenhagen have now been changed to numbers and letters.

The merchants' harbor became the King's Copenhagen and is famous for her beautiful architecture. From land as from sea, the city is marked by elegant copper towers oxidized by the salty Baltic Sea atmosphere. Some of the most original and fine examples had already been erected during the Renaissance by King Christian IV. Among these was Rosenborg Castle (1606), the Royal summer palace. Since 1800, this castle has been the treasury of the Danish monarchy. Because of the recent reconstruction of the vaults, the Royal Treasury has become one of the most exciting sights for visitors, right in the center of the city.

More recently, the National Museum, facing the castle of Copenhagen, Christiansborg, has also undergone a redesign in the department showing the national treasures in metal, among which is the cup of Margrethe I, queen of the Northern countries. In this museum you can also find the gold of the Vikings and fantastic pieces like the sun chariot and gold horns.

Many famous gold- and silversmiths have served the Royal House and the citizens of Copenhagen, but one the most famous was Georg Jensen, a living symbol of Danish design since the establishment of his workshop at Bredgade 36 in 1904. As a modern pioneer of jewelry and silver holloware, he developed a contemporary style featuring sculptured works finished by the touch of his hammer. He and a group of the finest gold- and silversmiths made Bredgade street part of our modern design history. Today you will find A. Michelsen and A. Dragsted, both Royal Court Jewelers, next door to each other at the top of the street. On the same side further on, at 47, the charming shop of Kay Bojesen is marked by a parade of fine toy soldiers. Bojesen was one of the founders of Den Permanente, the home of Danish design for 50 years. At the end of the street the Danish Museum of Decorative Art is located at number 68. Here you will find the history of modern design on show in an attractive complex built as a City Hospital by King Frederik V. The four wings of the house were restored and furnished by two architects in 1926, one of whom, Kaare Klint, already at that time had a reputation as the leader of Danish furniture design. This museum is a must for visitors interested in design and applied art.

Within walking distance from the museum a surprisingly large number of designer goldmiths and even some silversmiths as well as a number of fine showrooms for metal design are found. A few years ago a gallery of gold- and silversmithing was established by a team of young artists at Nybrogade 26, just opposite the Thorvaldsen Museum alongside the canal. Besides showing members' work, this gallery also invites guest artists from abroad to exhibit and even shows work by graduating students from the Danish College of Gold- and Silversmithing.

The following list is an introduction to places of interest all over Denmark. See some of the museums and visit the churches known for fine church silver. Workshops are scattered throughout the country — even some of the best known are the most remote — so you have to make a tour; Copenhagen is great, but still it is just a small part of Denmark.

Kunstindustrimuseet

Rosenborg Castle

Photos: Jan Lohmann

Galleries

COPENHAGEN

Den Permanente
(The Permanent Exhibition
of Danish Art and Craft)
Vesterport
1612 Copenhagen K
Phone 01 124488

Galerie Metal, nutidig sølv - og guldsmedekunst (Gallery Metal for Contemporary Silver - and Goldsmiths Art), Nybrogade 26, 1203 Copenhagen K, Phone 01 145540 Galerie Metal opened in December 1978, and, at the time, was the only gallery in Denmark dealing exclusively with jewelry and other objects designed by contemporary silver- and goldsmiths. Jan Lohmann and Peder Musse, both goldsmiths, began their collaboration at Nybrogade 26, where Lohmann had his workshop and showroom, which was expanded to include a gallery. The gallery was conceived as an exhibition center for the art of silver- and goldsmithing for both Danish and foreign artists and as an alternative to museums which often are restricted to permanent collections or by predetermined conditions for their exhibition activities. In recent years, various exhibitions have been mounted in the gallery, including one from West Germany and one from Brazil. Last year Lohmann and Musse extended their collaboration to include silversmiths Erik Ingomar Vangsgaard and Claus Bjerring. If all goes as planned, the next foreign exhibition will be from the United States in 1982.

Goldsmiths/Designers Workshops and Showrooms (Open during normal business hours)

COPENHAGEN

I. and A. Griegst
Vimmelskaftet 41 F
1161 Copenhagen K
Phone 01 142094

Goldsmith
Ole W. Jacobsen
Store Kirkestræde 1
1073 Copenhagen K
Phone 01 133003

The Goldsmiths B&B
Birte Jørgensen and
Birte Stenbak
Gothersgade 107
1123 Copenhagen K
Phone 01 144478

Smykkeform Goldsmith
Jytte Kløve
Hovedgade 44
2800 Lyngby
Phone 02 885585

Goldsmith
Thor Selzer
Skindergade 44
1159 Copenhagen K
Phone 01 138585

Goldsmith
Peter Vang
Studiestræde 36
1455 Copenhagen K
Phone 01 113697

JUTLAND

Goldsmith
Jørgen Rasmussen
Gravensgade 14
9000 Aalborg

Goldsmith
Johan Torp
Sct. Clemens Torv 17
8000 Aarhus

FUNEN

Anette Kræn, Vestergade 44, 5000 Odense C, Phone 09 140075 Anette Kræn completed a 4½ year goldsmithing apprenticeship, spent two years at a goldsmithing college and studied in Germany and Switzerland. Seven years ago she opened her studio/workshop in the pedestrian area in the center of Odense. Her work has been exhibited in Japan, Belgium, Germany, Iceland and Sweden and she has taken part in exhibitions at several Danish museums, including Charlottenborg and The Industrial Arts Museum. She has also had several important one-man exhibitions.

Mountains and rockscapes form the basis of her inspiration, as one can imagine them being blown apart by the forces of nature to form pieces of a jigsaw puzzle which may be reassembled to reflect nature. These thoughts are transformed into sculptural shapes in gold, silver, ivory, colored metals, leather and wood. Since 1978 Kræn has been associated with Georg Jensen Silversmiths as a jewelry designer.

Firms with Extensive Workshop Facilities Employing Several Designers (Visitors by appointment)

JUTLAND

Hans Hansen Sølvsmedie A/S
Mazantigade 2
6000 Kolding
Phone 05 525110

Anni and Bent Knudsen
Dyrehavevej 103
6000 Kolding
Phone 05 524599

Bent Gabrielsen Pedersen
Langdallund
6000 Kolding
Phone 05 528383

COPENHAGEN

Georg Jensen Sølvsmedie A/S
Ragnagade 7
2100 Copenhagen Ø
Phone 01 114080

From left to right:
Ole Bent Petersen
Jan Lohmann, bracelet
Stefan W. Tetens, bracelet and ring

Museum Collections of Jewelry and Holloware

COPENHAGEN

David Collection
Kronprinsessegade 30
1114 Copenhagen K
Holloware from 1600 – 1700

National Museum
Frederiksholms Kanal 12 and
Ny Vestergade 10
Copenhagen K
Collections from
"Prehistoric Denmark" and
Denmark from the Middle
Ages to 1750

Rosenborg Castle
Østre Voldgade 4 A
1350 Copenhagen K

Kunstindustrimuseet, Museum of Decorative and Applied Art, Bredgade 68, 1260 Copenhagen K
The Danish Museum of Decorative Art is housed in the former Frederik Hospital, built 1752 – 1757 under King Frederik V by architects Niels Eigtved and Lauritz de Thurah, to form part of the Frederik City, a new quarter of Copenhagen planned with the Palaces of Amalienborg as its center. The building was used as a hospital until 1910. Its four wings, surrounding a garden, were restored from 1921 – 1926 by architects Ivar Bentsen and Kaare Klint and adapted to house the collections of the Museum, which comprise European decorative art from the middle ages to the present, arranged in chronological order.

The Danish Museum of Decorative Art was founded in 1890 jointly by the Industrial Society and the Ny Carlsberg Foundation. Its first building was opened in 1894. It is an independent institution, but receives support both from private and public sources. The collections are constantly being added to. The field of activities includes exhibitions, public lectures and publications.

JUTLAND

Bangsbo Museet
9900 Frederikshavn

Holstebro Museum
Museumsvej 1
7500 Holstebro
Holloware

Museum on Koldinghus Castle
6000 Kolding

Tønder Museum
Kongevejen 55
6270 Tønder

Private Silversmith Workshop and Design Facilities (Visitors by appointment)

ZEALAND

Ib Andersen
Værkstedvej 5
2500 Valby
Phone 01 461251

K. Holst Andersen
Tinglevvej 13
2800 Gentofte
Phone 01 652087

Ib Bluitgen
Birkebakken 82
3460 Birkerød
Phone 02 811817

Per Sax Møller
Borups Alle 106
2200 Copenhagen N
Phone 01 239009

Wilhelm Jensen
Vandkarsevej 56
2880 Bagsværd
Phone 02 984867

John Rimer
Bakkesvinget 26
2760 Måløv
Phone 02 973435

Erik Sjødahl
Læderstræde 11
1201 Copenhagen K
Phone 01 131679

Peder Vedel Taaning
Vordingborggade 1
2100 Copenhagen Ø
Phone 01 424328

Jørgen Dahlerup
Gærdesmuttevej 24
2970 Hørsholm
Phone 02 866663

Claus Bjerring
(Gallery Metal member)
Kompagnistræde 25,4
1208 Copenhagen K
Phone 01 141680

JUTLAND

Karl Gustav Hansen
Mazantigade 2
6000 Kolding
Phone 05 525100

Allan Scharff
"Rønnegaarden"
Endelave
8700 Horsens
Phone 05 689101

BORNHOLM

Mogens Bjørn Andersen
Olsker
3770 Allinge
Bornholm
Phone 03 980496

From left to right:
Anette Kræn. Photo: Erik Brandt
Peder Musse, *Festival of Fools* pendant
Torben Hardenberg, pendant

Jewelry Design Workshops (Visitors by appointment)

ZEALAND

Agnete Dinesen
Landevejen 94
4060 Kirke Saaby
Phone 02 399016

Palle Bisgaard
Ejby Strandvej 5
4070 Kirke Hyllinge
Phone 02 405049

Kirsten Pontoppidan
Granparken 174
2800 Lyngby
Phone 02 888785

Erik Ingomar Vangsgaard (Gallery Metal member), Lille Lyngbyvej 12, 3320 Skævinge, Phone 03 110218 Erik Ingomar Vangsgaard did not train as a goldsmith, nor does he work in gold, preferring the color and surface characteristics of silver. He also rarely incorporates mounted stones in his work. Vansgaard trained as a holloware silversmith. After a four-year apprenticeship at Holger Rasmussen's workshop, he completed his studies in 1958. He studied sculpture for some time with Henry Luckow-Nielsen at the Frederiksberg Technical School. After completing his education, he was hired by Georg Jensen, where the talented Gustav Pedersen was in charge of the workshop. In 1962 Vansgaard was accepted as a student at the Goldsmith's College from which he graduated in 1964. He has since worked for industrial designers and architects, but in 1974 he decided to become an independent jeweler. Jewelry for him is above all useful artistic objects. It must function well and be made precisely. Nature's organic forms have no place in his workshop's closed world of finely measured silver bars and threads, but nature is a source of peace, quiet and concentration for his work.

COPENHAGEN

Peder Musse
(Gallery Metal member)
Lavendelstræde 8
1462 Copenhagen K
Phone 01 114424

Jan Lohmann
(Gallery Metal member)
Kompagnistræde 25,4
1208 Copenhagen K
Phone 01 141680
Summer workshop
phone 02 324128

Jørgen Bindesbøl
St. Kongensgade 81
1264 Copenhagen K
Phone 01 140950

Ellen-Margrethe Brøker
Prinsessegade 50
1422 Copenhagen K
Phone 01 547557

Ole Bent Pedersen, Fredericiagade 6, 1310 Copenhagen K, Phone 01 130567 and 01 112976
Ole Bent Petersen, one of the most outstanding jewelers in Europe, incorporates many influences in his work, from Pop to Constructivist to Egyptian. Besides making his own sculptural work, he also designs for Georg Jensen Silversmiths.

Torben Hardenberg, Gammeltoftgade 24, 1355 Copenhagen K, Phone 01 158982 After receiving his goldsmithing diploma in 1976 at Odderhede, Torben Hardenberg worked as a commercial designer with Buck & Dickmann for a number of years, before setting up as an independent goldsmith. In his work he primarily insists on forms that give an esthetic expression to his fantasies. He tells fairytales — not sweet stories for well-bred children — but rather inspiring stories revealing archetypal traits of human character. Not surprisingly, Torben Hardenberg is inspired by two great Danish tellers of tales, Hans Christian Andersen and Karen Blixen. The symbolism of his work is clearly to be seen in jewelery he has created for a number of Danish theaters, among them The Royal Theatre of Denmark. Torben Hardenberg' jewelery is characterized by a confrontation of several styles: fragments of gothic mysticism with modern technology. As a consequence of this he uses a wide variety of materials from plexiglass to precious stones and metals.

JUTLAND

Helga and Bent Exner, Rødehede, 9440 Åbybro, Phone 08 245195

Schools of Metalsmithing and Jewelry Design (Visitors by appointment)

ZEALAND: COPENHAGEN

Vocational School for Gold- and Silversmiths
Værkstedvej 5
2500 Valby
Phone 01 461251
Superintendent: Ib Andersen

Guldsmedehøiskolen (The Danish College of Jewelry and Professional Trade Design) Higher education for Danish and foreign applicants, Værkstedvej 5, 2500 Valby, Phone 01 461251

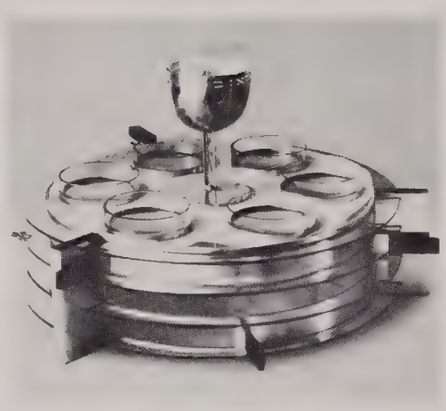
Jan Lohmann was trained as a goldsmith and opened his own workshop, now called Gallery Metal, in 1968. His work has won numerous awards and has been shown in Europe, Scandinavia and North America

LUDWIG Y. WOLPERT: JEWISH RITUAL ARTIST

by Bernard Bernstein

Above: Ludwig Wolpert **Opposite:** *Hanukkah Menorah,* brass, 11x11½", ca. 1957. Collection North Carolina Museum of Art, Raleigh

Sabbath Candelabrum, "O come, let us sing" (Psalm 95:1), bronze, 16½x12¼", 1965. Collection The Jewish Museum, NY, Gift of Abram and Frances Kanof



Passover Set, Seder Plate with Six Dishes—frame, silver and ebony, 4x16", dishes, glass, 2¾" d.; Kiddush Cup—silver with glass, 6x2¾", 1930.

Mezuzah, silver, 4½x1⅝", 1939. Collection The Jewish Museum, NY, Gift of Abram and Frances Kanof. Photo: Geoffrey Clements

If the United States were to follow Japan's practice and designate some of its artists as National Treasures, I would have submitted the name of Ludwig Wolpert. But we don't recognize our outstanding artists that way, so at the very least I feel I must address the community of metalsmiths to let it know whom we have lost.

Some people are like comets that appear now and then to light up a distant corner of the sky and then are gone. Ludwig Wolpert, who died in 1981 at the age of 80, was such a person. He found a neglected field, cultivated it quietly and tirelessly and brought forth whole cornucopias of fruit. The field he coaxed back to life was Jewish ceremonial metalwork and the fruit was rich and varied. It consisted of his work, the work of the students and other metalsmiths who came into contact with him and perhaps the tastiest fruit of all, a change in the minds of countless Jews who saw his art and came away with new ideas about the form Jewish ceremonial art could take.

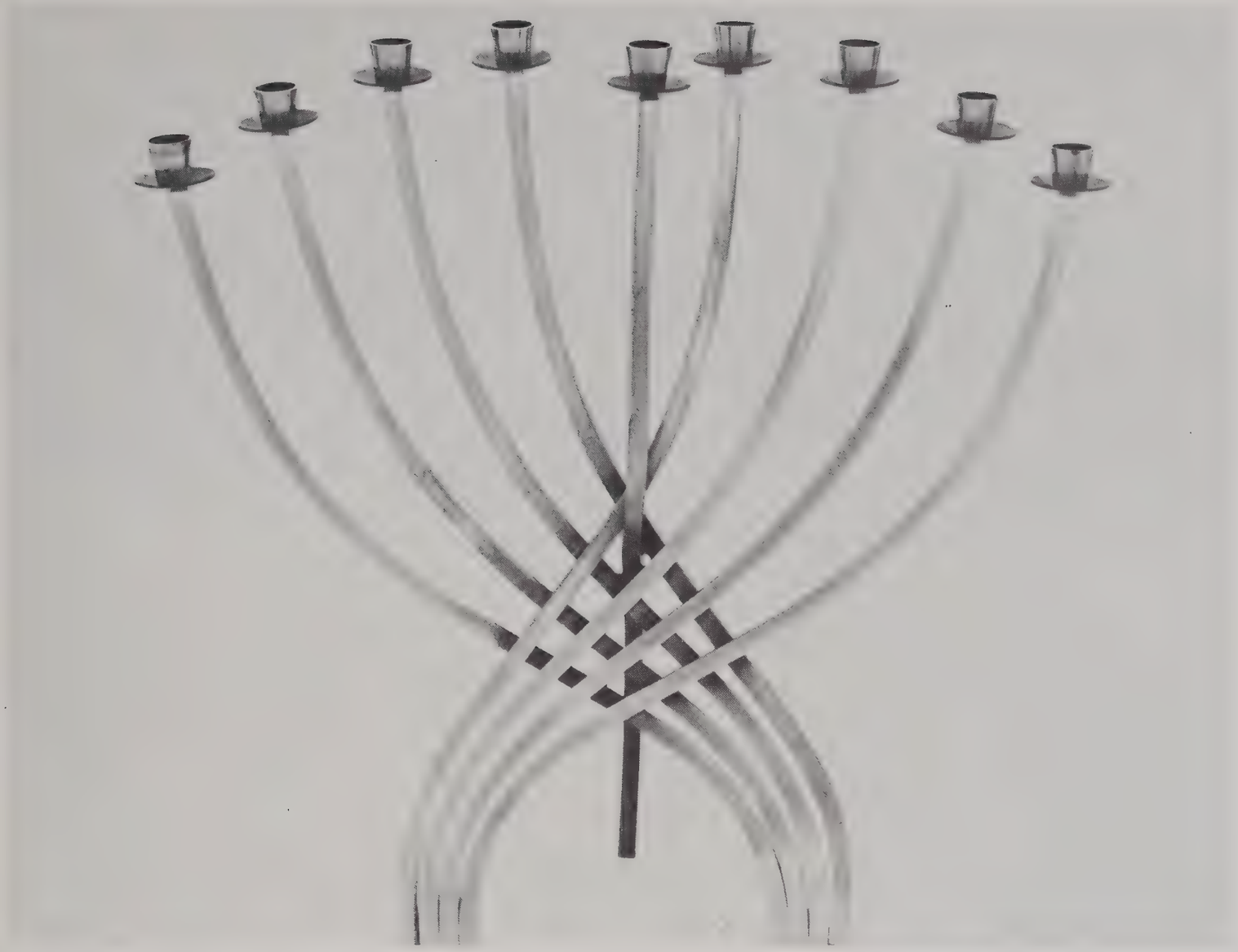
To appreciate Wolpert's impact on the vitality and direction of Jewish ritual art, one must know where it was before he arrived. Jewish ritual art began with a legend: the Biblical story of Bezalel, who constructed the Tabernacle and holy vessels according to God's instructions. Since then ritual objects have been produced wherever Jews live and worship. In Spain and Portugal, Jewish gold- and silversmiths flourished before the Inquisition and their eventual expulsion in 1492. Yet, no known Iberian object survives, and very little Jewish ceremonial metalwork made anywhere in Europe before the 16th century still exists. The golden age of Jewish ritual art in metal was the baroque, and most pieces now preserved in Jewish museums were made during the 17th and 18th centuries. Ironically, most western European pieces were made by non-Jewish metalsmiths. The design of these objects, like the secular objects coming from the same workshops, was in the style of the time and place. There was nothing "Jewish" about the pieces except for their specialized iconography and function.

When the Industrial Revolution destroyed the centuries-old, slowly evolving craft and design traditions, the decorative arts went through a series of "neo" and "revival" permutations and combinations, and finally reached an accommodation with the machine esthetic. For Jewish ceremonial art the clock stopped with the rococo and baroque and these styles became "official," so that even today many contemporary-looking American synagogues and temples use mass-produced pseudo-baroque ceremonial objects.

Ludwig Wolpert's contribution was to Jewish ceremonial art what the Bauhaus, Van Der Rohe, Mendelsohn and other pioneers of the modern design movement was to the decorative arts and architecture: he took an art form that had remained stagnant for 100 years and inspired it with the esthetic spirit of the 20th century. His revolutionary piece was a silver, ebony and glass Passover set that attracted critical acclaim when it was exhibited in the Museum of Arts and Crafts in Berlin in 1931.

In 1933, Wolpert emigrated to Palestine from Germany and soon became professor of metalcrafts at the Bezalel School for Arts and Crafts, where he continued to teach and create until 1956. In that year he came to New York to take charge of the Tobe Pascher Workshop at the Jewish Museum. At this unique silversmithing studio, Wolpert designed and executed his commissions and taught classes in contemporary Jewish ceremonial metalsmithing.

The range and volume of Wolpert's work was prodigious. His designs covered the entire spectrum of ritual objects used



in the home and synagogue, and even included jewelry and fabrics. Among his more important commissions were the gate in the International Synagogue at Kennedy Airport and the Ark and ceremonial objects in the Jewish chapel of the Air Force Academy in Colorado. His name was legendary with every synagogue art committee in the country.

Wolpert's stylistic and technical approach to metalworking was simple, graceful and functional. For 50 years he exploited a fairly narrow range of processes, yet somehow managed to express himself uninhibitedly and beautifully, reflect the needs and ideals of his delighted clients and remain fresh, clever and inspired. Just when you thought the fountain of possibilities in the use of sheet, rod, tubing, spinning, piercing and overlay had dried up, he would deliver a little surprise. How much, I often asked myself, can he do with the Hebrew alphabet (which was his favorite motif) and the conventional inventory of Jewish iconographic themes? Apparently a lot, for he focused on subtleties as he played with variations in form, content and process.

Wolpert's designs were not merely exercises in the relationship between line, shape, surface and volume. The content which dwells in them came from an encyclopedic and intimate familiarity with Jewish literature, history, liturgy and symbolism. The Hebrew alphabet in his hands wasn't just a means of identifying the ritual function of the object, it was communication, texture, motif and ornament. It expressed in metal the idea, precious to Jews for centuries, that the 22 letters are mystical entities and contain the secrets of the universe and the grand design of the Creator.

Wolpert's early training was in sculpture, and this may explain his uncanny inability to conceive a clumsy form. His favorite word was "proportion" and his pieces consistently displayed an elegance that revealed his instinct for the rightness of a design. To succeed so tastefully, for so long, in a field that was saturated with triteness, was by itself an extraordinary accomplishment.

Analysis can carry us only so far in looking for the source of Wolpert's accomplishment. He was the first Jewish metalsmith in history to bring the art of the ceremonial object to such heights and his works achieved the indefinable sacred presence that ceremonial artists try so hard to capture.

Something must be said of the man himself, the person I came to know, first as a student and then as a friend and frequent visitor to the workshop. Above all, he possessed a kind of courtly, gracious, unpretentious charm that enveloped anyone who came near. He was a hard-working, endlessly involved artist. My usual days for visiting were Sundays, which were busy for him. However, I was always treated to a display and description of his latest project, an education in itself, and there was time for a long conversation. For a man with so little free time, he seemed to know about and have well-formed opinions on everything, ranging from art to politics. He loved to joke, to laugh, to philosophize. When he disliked something, especially something in the art world, he left no doubt about his sentiments. He had a way of piercing directly to the center of an idea and expressing its essence with an economy of words that matched the visual economy of his metalwork.

Human societies, as well as individuals, have encounters with people who change the direction of their lives. Ludwig Wolpert's effect on the esthetics of Jewish ritual art had historic significance and will be felt for a long time. To the Jewish community he was indeed a National Treasure.

Photography for Metalsmiths

by Leslie Brown

Part Two:
Composition, Illumination and Reflection Control

6

An ongoing series of articles aimed at helping the metalsmith meet the challenges of photographing small, reflective work. In the Fall/81 issue of Metalsmith, *the basics of photography as it pertains to metalsmithing were discussed. In the course of that article nine points of critical consideration in the production of an accurate documentation photograph were listed. Five of these points, relating to the technology of photography, were discussed in detail. In this second part the final four points, which pertain to actually photographing a piece, will be discussed in terms of the most common methods used in photo-documentation. The article concludes with an alternative method which has proved extremely successful in suiting the metalsmith's needs.*

The four concluding points to pay serious attention to when setting up a tabletop studio are:

1. Color accuracy
2. Descriptive and esthetic composition
3. Illumination
4. Reflection control

Color accuracy was also considered under photo basics, as it is a function of photographic technology. But assuming the illumination/film combination is correct, the photographer is then responsible for isolating the object from ambient light (room lights, windows, etc.) and for avoiding color casts produced by the photofloods illuminating colored objects (walls, drapes, whatever) which send colored rays back onto the object being photographed. Solutions to these problems will be apparent in the discussion on various methods of setting up pieces for photography.

The second point, descriptive and esthetic composition, involves keen attention to all nine points (as listed in the previous article) as much as to the more obvious aspects of framing and placement. The goal of descriptive composition is to achieve the most accurate two-dimensional rendering of a three-dimensional object as possible. This entails good modeling in terms of light and shadow, good separation from the background (no edges blending away) and as little perspective distortion as possible. The latter is a function of camera angle. Extreme points of view may add drama to the photograph but usually give a distorted and incorrect impression to the viewer.

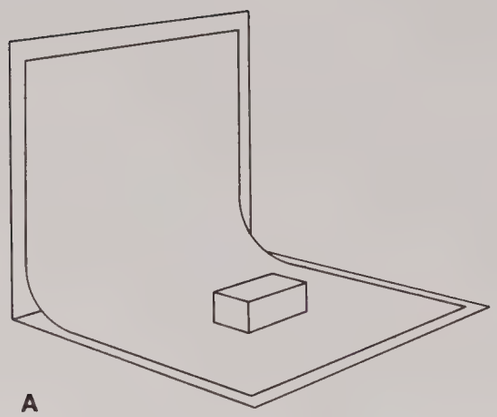
The most important aspect of achieveing esthetic composition is in overcoming one's apriori knowledge of the piece and being able to see it fresh in the viewfinder. It is "all to easy" for the artist/photographer to mentally screen out serious flaws which will be "all too apparent" to the viewer. Reflection, lighting and framing must all be noted, but so must dust or fingerprints on the piece. Are there marks or dirt on the background material? Is the background material wrinkled? Is the camera seeing beyond the edges of the background, recording articles not meant to be part of the photograph?

Most 35mm cameras "see" less than they record. In other words, a greater field of view will be recorded on the film than is seen through the viewfinder. When working with black and white this is not a real problem, as all extraneous material can be cropped out during printing. In principle the same is true for color negative films. However, many commercial printing labs have fixed-frame equipment which does not allow for cropping. This can be overcome by doing one's own cropping by using scissors on the finished prints. The serious problem with viewfinder cut-off comes with slides. If the overtake is minor the slide mount will probably cover it. If this normal masking of the mount is insufficient (and it often is), two recourses are available. The first is to have the slide duped with a request that the undesirable portion be cropped out. This method is a further expense and produces a slide inferior in image and color quality. The second method is best. Leitz silver slide binding tape is absolutely opaque and sticks permanently. An adequate "slide crop" can be effected by applying this tape directly to a mounted slide. A better approach is to remove the slide from the mount, apply the tape, and then remount in a plastic or glass slide mount. All of these corrective measures can be dispensed with, however, by allowing for overtake in the setup.

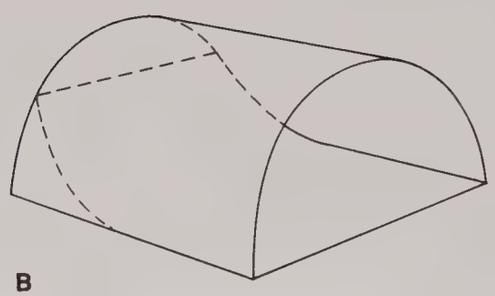
Illumination, the third point, is the hardest to cover in a general how-to article. While the photographic methods given here are discussed in terms of how the lighting is applied, any object photographed will have its own requirements as to angle of illumination, intensity and so forth. Whatever sort of tabletop studio an artist chooses to set up, therefore, will require some trial-and-error manipulations of the light to achieve the desired effects.

It is strongly recommended that the artist/photographer use a single illumination source and fill shadow areas with white reflectors. This eliminates the problems of multiple shadows and highlights, both of which can be confusing to the viewer as well as unattractive. Two or more lights also tend to make the photographic image flat. A single primary source and a bright, white reflector as the secondary source will provide good detail in shadow areas but retain modeling and contrast. Instead of blitzing the piece with multiple lights, a single light is used more efficiently by reducing dispersion (the loss of light not hitting the piece directly). Reflectors must be white or silver—white is recommended. Any

Opposite: 1. Photo of same bowl with which Part One of this series opened. This time, however, the bowl was photographed in the light box described in this article. The photograph was made on Plus X film. Illumination came from a single, 150w, undiffused photoflood. **Above: 6.** A nonreflective object photographed in light box with undiffused light.



A



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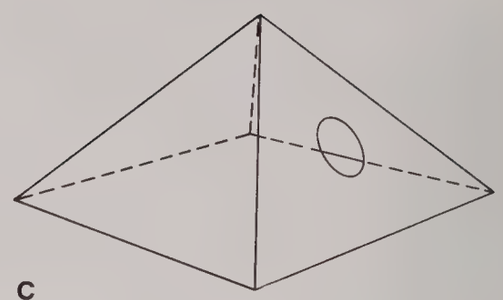


C

other color will throw a cast back onto the subject which will affect color quality.

One final important note about lighting. The 3200 and 3400 degree Kelvin photofloods for use with Ektachrome and Kodachrome films, respectively, are available in the internal reflector style in 500 watts only. These put out an intense amount of heat which makes them hazardous to work around. If the fixture they are being used in is not designed for bulbs of that wattage fires can result. Use these bulbs only for color work. For black and white an internal reflector bulb of 150 watts is usually adequate.

The fourth point is reflection control. This is generally a problem only when dealing with high-polish pieces. Articles of high luster (as opposed to high polish), however, can also often benefit from reflection control. Reflections themselves cannot be eliminated. But placing the object in a continuous tone environment will allow it to reflect a continuous tone, thereby putting the emphasis back on the object's form and structure. Instead of seeing a distorted panorama of what surrounds the object, the object itself becomes apparent. The traditional method of providing a piece with a continuous tone environment—the light tent—will be discussed later. An alternate, and more versatile, method is the "light" box, discussed in the concluding section.

Whatever photo method is used, the reflectors and environment surfaces used for reflection control must be white. Silver objects in a color photograph will "read" easily as silver if the predominant reflected color is white. In black and white the only way to lift an object's tonal range out of the grays is to give it a hard white to reflect. Gold, brass and copper, as well as all other materials, will hold their actual colors better in a white environment—not to mention the added illumination benefits over any other color and its respective value.

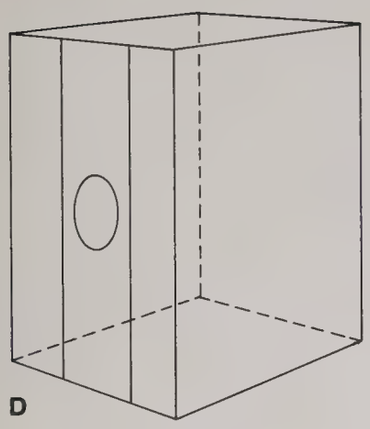
Setup Methods

Following are five of the most commonly used approaches to metals photography by nonprofessionals. The first is by far the hardest in which to achieve quality results. The second is better and the third, when used properly, is better yet. The fourth is often attempted and, while success can be quite effective, the results are often less than adequate. The last is a tricky method more applicable to special purposes than general work. It is included here for the sake of completeness.

1. Object in a set. The set, in this case, refers to an environment beyond the neutral and ambiguous backgrounds used in documentation. A few examples include advertising (where models, scenery, or other articles form an environment), large sculptural pieces which defy a studio approach and installed pieces where the photo has to include some of the surrounding area. For the purposes of documenting small works, sets should never be used. Extraneous material will only divert attention from the piece and possibly make "reading" the resulting photograph difficult. If the size of the piece must be reduced in relation to the frame, then the corresponding reduction in negative space occupied by the piece will result in a less precise and detailed image. For the most part, the same can be said for using models. The model, may, however, be unavoidable to an accurate understanding of how the piece works. The piece will of course suffer some loss in quality, and reflection control will most likely be difficult to impossible. The trade-off must be carefully considered in determining which approach to take. As with a model, control of lighting and reflections is much more complicated in a set situation. Equally problematic is the control of color casts. Objects in the set or clothing worn by the model all have colors which will readily be picked up by the piece.

2. Seamless background. The seamless background is a device by which everything behind the piece is eliminated, even—and especially—the juncture between what the piece sits on and the vertical surface behind it. It is very simple as seen in Illustration A. The piece is set on a chosen material which is then curved up the vertical surface in back. The material used for such a background should be somewhat stiff to avoid wrinkles and billowing. Heavy drawing and tracing papers are suitable, as is frosted mylar (available at well-stocked art and drafting supply stores). Fabric, unless backed with a stiffener, does not work well. For objects where high reflectivity is not a problem, the seamless background used in conjunction with one light and the necessary reflectors is quite adequate. This kind of tabletop studio can be set up in minutes. A frontal reflector can be made by cutting a lens-size hole in a large piece of heavy bristol board and fitting it over the lens. This throws a good amount of illumination onto the camera side of the piece which will give some extra snap to the photograph.

3. Light tent. There are endless variations on this method, which is a standard in the photography of objects. The tent is a framework covered with a translucent material such as thin tracing paper, frosted mylar or gauze. The illumination is provided from the outside, thus bathing the piece in a soft, diffuse light. The surface of the piece reflects the relatively continuous tone of the white walls. Illustrations B through D show three varieties of light tents. For reflection control work, the front has to be sealed as well, leaving only a lens-sized opening for the camera. Light tents of this style have three basic drawbacks. First, they are difficult to light evenly, which makes it hard to obtain the continuous tone reflection on the piece. Second, a good deal of



D

A. Simple seamless background setup, usually adequate for nonreflective objects. Highly reflective objects do not fare well in this type of open situation (see Figure 2). Background material should be fairly stiff, such as heavy drawing paper, to avoid billowing and wrinkling

B., C., D. Three light tent designs. All three utilize a framework (wire or doweling) covered with translucent covering both diffuses the light for soft shadows and controls reflections

light power is lost by the light having to go through a diffusion material. And third, due to the soft nature of diffuse light problems often crop up in trying to get good separation between the piece and its background. Contrast and modeling often suffer as well.

4. Black background. Black backgrounds are extremely difficult to work with and often end up doing more damage than good in the photograph. Such photos also tend to be a printer's headache when it comes to publishing in black and white. The heavy black is prone to running into the lighter areas of the picture. The primary problem with the black background comes from the way it is rendered photographically. The area is black because it is reflecting no light at all. Hence no exposure is being made on the corresponding area of film. It follows that any areas of the piece which are reflecting the background or whose edges are in shadow are not making any exposure on the film either. The result is an unavoidable and uncorrectable blending of the piece with the background. In many cases this can destroy the form of the piece and much detail. The reverse of this, the white edges of a piece blending with the white reflections, is equally a problem. But as the white areas produce significant density on the negative, even the slightest tonal differences can produce acceptable definition in the print or slide.

When the black background is desired, however, there are a couple of do's and don'ts. The only true black can be achieved through shadow. A black velvet background will still show up as texture at best and as lint-covered gray at worst. Move the piece away from the background (which does need to be black) and use baffles of some kind to throw the background into shadow. For a totally black background from top to bottom it usually works to suspend the piece. Doing this also reduces the problems of blending edges mentioned above and allows reflectors to be positioned which could fill black reflections, thereby achieving the desired separation.

5. Light table. This technique involves setting the object on or in front of a translucent material which is illuminated from behind. The effect, when evenly lit, is a pure white, shadowless background. As noted earlier, there are special applications for this technique, but for general documentary photography it is not well suited.

An Alternative Method

Following are the basics for a method which has proved to be reasonably easy and reliable as well as lending itself to easy modification. The piece is simply isolated in a box having a white interior. The illumination is provided from above and the background tonality is regulated with shadow. The white interior serves two functions. First it makes the illumination source extremely efficient. The primary source is obviously from above but the white interior bounces the light back onto the piece filling the shadows for good detail. The second function of the white interior is to provide the object with a continuous tone environment, thereby achieving reflection control.

For the light box to work properly, it is important that the front be sealed, allowing an aperture only large enough for the camera to see in. Whatever is used to seal the front should, of course, be of the same tonality as the sides and floor of the box. One method of achieving this seal is to cover the front with two "barndoors," leaving a vertical slot down the middle for the lens to look through. By placing a bristol board reflector over the lens, as mentioned earlier, the slot will be completely sealed yet allow vertical movements of the camera. In a highly reflective piece, however, the lines, shadows and subtle tonal differences in this barndoor/reflector method are often disturbingly visible.

For the maximum in isolation of the piece with a minimum of lines and shadows, it is best to curve a sheet of heavy, appropriately toned drawing paper into the front of the box. The camera height and angle must be predetermined and a hole cut into the paper at the proper place. There will often still be a reflection of the juncture between the wall and floor of the box. This is unavoidable but far better than the jumble of reflections occuring in uncontrolled situations.

Whenever possible the illumination should be direct and not diffused. This will provide full intensity lighting and adequate contrast. For pieces so shaped that what is above them is readily reflected, a diffusion screen may be necessary. A durable and effective screen can easily be made by covering an appropriately sized piece of ⅛″ clear plexiglass with frosted mylar. Use wide vinyl tape to bind the two together. The finished screen can be laid atop the box whenever it is needed.

Especially when dealing with silver, it is often necessary to provide for visual separation of the object and its background. This is most easily effected by letting the background fade to black as it rises behind the piece. For the pieces used to illustrate these articles two steps were involved in darkening the background. In the initial setup of the box, the back wall was covered with black matte board. The seamless background material is frosted mylar. Where the mylar lies on the floor of the box it is naturally white. As it curves up off the floor and toward the back wall, however, it begins to go gray. As the angle increases and the mylar comes closer to the back wall, the effect from the front of the box is of the material getting blacker. To augment this effect, the second step is to throw the area into shadow. This can be done by laying an

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3

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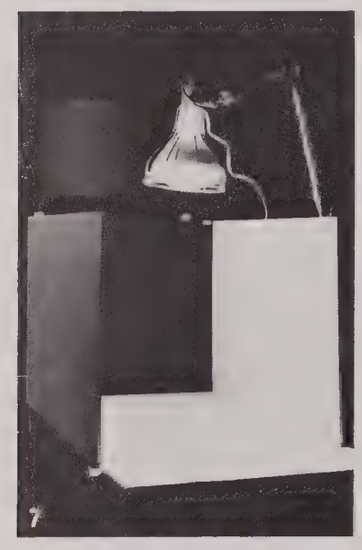
5

This series of photographs was made under various lighting conditions. Note the black ellipse in the center of the bowl in all four photos. This is the camera lens. With an object of this shape (as opposed to the shape of the bowl in Figure 1), it is impossible to eliminate the lens reflection. **2.** The goblet has been placed on a seamless background set-up similar to Illustration A. Two reflectors have been used—one to the left and another in front of the camera (a hole has of course been cut for the lens). **3.** The goblet has been placed in a white box and lit from above. Note the hard-edged reflections of the box corners and the camera slot. The various tonalities of the unevenly lit walls give the bowl a patchwork quality. **4.** The goblet is again in a white box with identical lighting to Figure 3. This time, however, the front of the box has been sealed with a wrap-around reflector as shown in Figure 9. Note the significant reduction in reflections. **5.** The only change from the situation in Figure 4 is that the top of the box has been covered with a frosted plexiglass diffuser (easily made by covering an appropriately sized piece of $\frac{1}{8}$ inch plexiglass with frosted mylar). Note the softer shadows and lightening of recessed areas. The bowl seems more uniform in value because the diffuse light homogenizes the light inside the box, thereby avoiding harsh contrasts and uneven illumination. Diffuse light is not always the best, however, and each object photographed should be evaluated in both diffuse and undiffuse light.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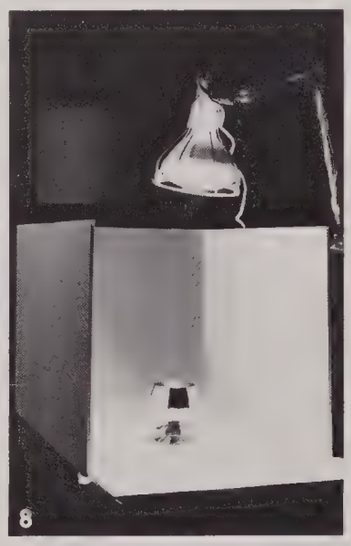
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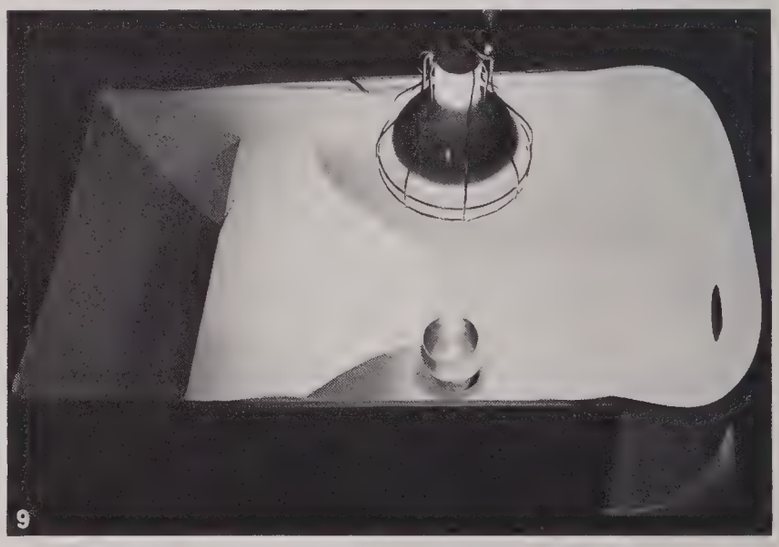
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A series showing the progressive steps in setting up for the object depicted in Figures 2 through 5. **7.** A camera-end view of the light box with illumination in place. Note that the back of the box is covered with black matte board to enhance the tonal shift in the photograph background. **8.** The goblet has been placed on the mylar background material (chosen for its translucency which allows the above-mentioned black to show through more and more as the mylar gets closer to it. It is at this point that the placement of the goblet, camera angle and focus were determined.**9.** A top view of the finished setup. The wrap-around reflector (which does away with the hard corners so beautifully reflected in Figure 3) has been put in place. The lens hole was cut to accommodate the predetermined camera height and angle. A baffle can be sen above and slightly behind the object (from the camera's point of view). This serves to increase the graduated black in the background as well as bounce a little more light down onto the piece. For Figure 4 this is exactly as it was taken. To obtain Figure 5 the only change was the covering of the whole setup with the diffusion screen.

opaque covering over the rear half of the box or, more efficiently, by lowering a shade down into the box until it is just out of camera view. The shade should extend from the rear of the box to just behind the piece and from one side to the other. It is easily held in place by straight pins. Whatever efforts are made to control and adjust the light in the box, always make judgements by looking through the viewfinder.

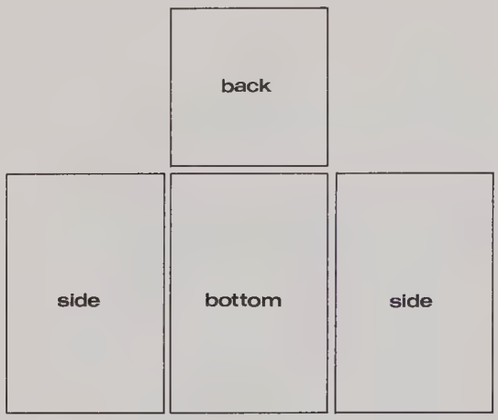
Although the examples in these articles have been objects, the box works equally well with jewelry. Jewelry which stands—rings for instance—can be treated in an identical manner as the objects illustrated. Pendants, if they can be easily suspended, also work well. Pieces which must lie flat, while not benefitting from a graduated background can still be well lit and have controlled reflections.

One final note concerning illumination. On the above method or any of the previously discussed methods, electronic flash may be substituted. This is, however, inadvisable for the nonprofessional for a number of reasons. With a flash it is difficult to determine, without using a separate modeling light, exactly what the lighting effects will be. On jewelry, and other articles requiring close-up photography, the exposure charts on the flash are wholly inaccurate. If flash is to be used, a test series of the setup should be run to determine exposure values. Always use daylight-balanced film with electronic flash.

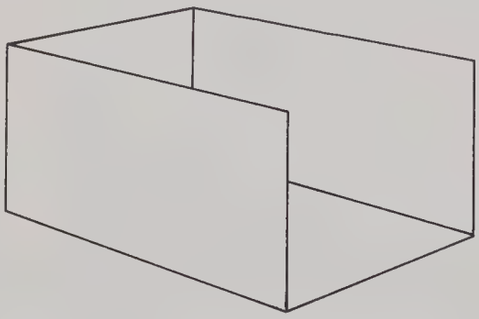
Leslie F. Brown, who holds a B.F.A. from Colorado State University and an M.F.A. in metalsmithing and jewelry design from Indiana University, has also worked as both a professional darkroom technician and photographer. During his graduate studies at IU he was awarded a grant to investigate methods of reflection control when photographing highly reflective objects. He is presently a self-employed metalsmith, working in Fort Collins, CO.

Light Box Construction

The construction of the light box referred to in this article is fairly simple. The material used is ¼" foam-core board, available at any well-stocked art supply store. It comes in sizes up to four by eight feet and is not terribly expensive. Foam-core is very lightweight yet also very strong. It cuts easily and precisely with an X-acto knife. While light boxes can be made collapsible by just pinning or taping the pieces together, a very sturdy and permanent box can be made by assembling it with white glue. Apply the glue to the edges and pin into place; 10 minutes later it is finished. To help mute the seams when dealing with reflective pieces, run a bead of the glue down all interior seams. A final plus for foam-core board is its brilliant white surface, which is excellent for these photographic purposes. On the assumption one is using either a 50-55mm macro or 50-55mm normal lens with close-up device, the ratio for the width of the box to the length should be about 2 to 3—two units wide and three units long. It is generally best if the height of the box is close to the width. This allows for the camera to be set at the end of the box and have the viewfinder see only the floor and the back. Actually, there is some overkill here which allows the camera to be moved even further back if necessary. While smaller pieces can be photographed in large boxes, it is a good idea to keep the box as small as possible in relation to any given object. This gives a greater concentration of the light and makes any customizing easier. Two "barndoors" should be cut out of the foam-core for the camera end but not glued in place. These can be manipulated in and out leaving a slot in the center for the camera lens.



E. The four pieces necessary to construct the light box. Dimensions should be tailored to the piece, but the ratio of the width to the length should be two to three. The height of the sides and back should be roughly equal to the width.



F. The finished light box. Be sure to take into consideration the ¼ inch thickness of the foam core board when cutting out the pieces

Exhibition Reviews

Erik Höglund
Heller Gallery, New York City
January 9–30, 1982
by Erik Erikson

Erik Höglund, *Tre Människor med Glasskal,* forged iron, glass, 7¼"w. Photo: George Erml

There is an impish quality about Erik Höglund, a shy playfulness, yet at the same time, there is a sense of imperturbability, of stillness. Both pervaded the exhibition of Höglund's glass and metal sculpture at the Heller Gallery. Given Höglund's Swedish/Finnish heritage, his shaven head and almost Oriental inscrutability, one might anticipate a sobriety and gravity. But these are belied by the bright yellow rumpled corduroy suit with shirt casually unbuttoned at the collar. Dichotomy and paradox are intriguing and enduring for what eludes.

At first glance, the work in this totally figurative exhibition looks deceptively simple, characterized by obvious gesture and conventionalized expression. However, continued, more thoughtful viewing penetrates beneath superficial appearances. The faces smile, but enigmatically. The eyes stare coldly ahead, seeing but unseeing. The trapeze artist swings, with a gaiety that is at the same time desperate. Anecdotal figures are frozen in their self-absorbed stridings, heedless to a fallen figure, arm raised in supplication, ignoring a fellow human about to be mugged. An attenuated figure bends to tentatively touch a prostrate form. Is it sleeping? or dead? A figure as vessel, or vessel as figure, strains to open itself out, anguish etched on the blunt face while the legs idly cross at the ankles. Stolid, resigned figures, existing in some all-encompassing, profound silence, hold aloft disproportionate discs of metal or glass. In contrast, the small family bronzes are more lighthearted in their domesticity. Höglund's infant son, Albin, is tossed, held, swung, kissed, carried, changed, admonished. His wife, Ingrid, eats breakfast. Erik and Ingrid argue. Holding, hugging, caressing couples are affectionately intimate in their nakedness.

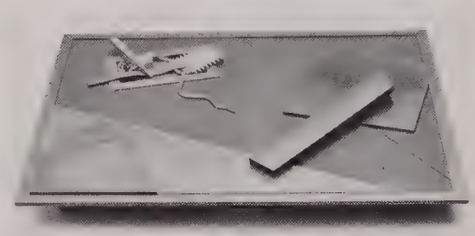
The many small, actively gesturing bronzes, no more than six or seven inches tall, were cast in the lost-wax method. A couple of larger bronzes, also lost wax, and several pieces of hot-forged iron, averaged from one to three feet in size. The iron figures, some combined with glass, were hot-forged in sections and welded together. There were a few bisque-fired terracotta heads, under life-size, hung on the wall and looking like primitive trophies of battle. There were some hand-blown, engraved glass vessels, and there were glass discs and rectangles, cast or sandblasted with engraving, in heavy, wrought iron framing. There were double heads, suggestive of carved blocks of ice, cast of glass in iron molds. Small sutures resulting from the required multiple gathers of glass left evidence of lines where the ice might have slightly melted.

Höglund sculpts the figures in wax, clay or plaster, carves the graphite, does all the engraving, but he does not do his own casting, forging or blowing. He employs the traditional European custom of artist working with craftsman that was deplored in the early burgeonings of the present American studio glass movement, where the individual artist was extolled as sole craftsman. The practice, however, is becoming more commonplace as American artist/entrepreneurs belatedly acknowledge the advantages of competent assistance in realizing their artistic and economic potential.

Light-hearted and serious, intimate and alienated, familiar and funereal, the contrasting humanism embodied in the art of Erik Höglund is welcome relief from the futile formalism, funk and put-on that characterizes so many exhibitions these days.

The choice to exhibit Höglund's work because it combines glass with metal is a particularly appropriate statement of the expanding artistic concerns of gallery owner Doug Heller. Having rapidly established himself as the foremost purveyor of contemporary collectors' glass on the East Coast, Heller is expanding his metier to include other disciplines. According to Heller, the gallery at 965 Madison Avenue will continue to specialize in glass while the new gallery at 71 Greene Street in New York's SoHo district will feature work in other media, as, for example, the exhibition opening in April which will feature the work of Robert Ebendorf along with that of Diane Itter and Pueblo artists from New Mexico.

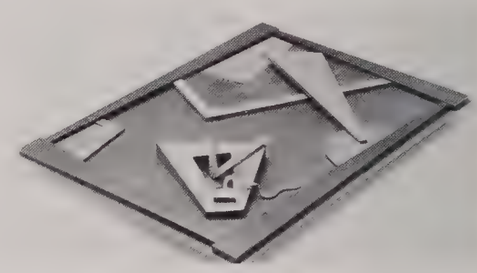
Aaron Macsai
Synopsis Gallery, Winnetka, IL
November 20–December 19, 1981
by Janet Koplos



Aaron Macsai, *Along the Highway,* copper, silver, 14k yellow gold, 10 x 13 x 3½"

Aaron Macsai makes elegant jewelry, restrained but not at all plain. In his recent solo exhibit he showed pins and pendants in his two preferred motifs. One is a flow line or current that can assume a tense character of contained energy or can have a graceful, releasing connotation. His second approach is a little more difficult to codify: he uses many small, repeated symbols. Sometimes these are just geometric shapes like triangles, or truncated versions of stylized natural phenomena, such as spirals, florals or segments of sunbursts. These may be metal set into a metal ground of another color or tiny three-dimensional elements set into a framing device. In the latter they occasionally suggest beautiful, miraculous machine parts but are more clearly akin to Byzantine ornamentation in their delicacy and density.

But Macsai's major emphasis in this show was nonfunctional objects. Seven of them were for tabletop or pedestal presentation; five were wall mounted. Several of the tabletop pieces were for me an agglomeration of separate elements that did not make a unified visual statement. I think the problem has to do with Macsai's conceptions of space and scale. For example, *Rolling Curve in Corners Park* was an approximately nine by twelve inch copper rectangle with raised, mitred edges that framed a number of metal elements set on or in the surface. The focus was on a copper slot in which an undulating band of striped silver was set. A silver and copper ring about 1½ inches in diameter rested on one of the recesses. This segment alone—band/ring/recessed slot—would have made a striking large-scale outdoor sculpture.



Aaron Macsai, *Broken Angles,* copper, silver, 14k yellow gold, 10 x 13 x 5"

However, surrounding it on the rectangular ground were other graduated and overlapping shapes which suggested corners or edges of other geometric shapes. The object as a whole was not so dimensional that it seemed like a model for a landscape sculpture, yet it wasn't flat enough to be an illusionistic creation of space.

Transitional Landscape, a smaller tabletop piece without a framing edge and tipped slightly forward on four legs, began to cohere as a conception of space. *The Well* was a tabletop piece that worked, in my opinion. It was perhaps seven by seven inches, with a recessed center area four by four, or so. Within this well were a half-dozen layers of polygons of various angles and colors. One might compare it to a multi-level stage set, but it also suggested a primitive shrine. Three snakelike tendrils of fine silver rose out of the surfaces and writhed across the levels. The base forms were hard, angular, warm and dark. The "snakes" were different in color, surface and form, and seemed almost baroque in comparison. They introduced a surprising sense of movement that enriched and enlivened the whole piece.

The wall pieces were uniformly successful. *Sensuous* was a square, with a smaller recessed center square filled with overlapping biomorphic curves and one long, languourous tendril of 14k gold. The overlapping forms bunched and splayed to create a sense of compression and relief and the tendril seemed to visually pull one into the recessed space. Space was also the key word in three related *Surrealistic Landscapes.* They

had pictorial illusions of space, with added bands, flat objects and baroque pearls erupting through a pitted surface area, so that the illusive space seemed to shift. Converging lines and compressed, triangular shapes alluded to depth, but every now and then a fragment reached forward slightly, into the viewer's space, activating the space but still contributing to the illusion so that the piece remained unified and tantalizing.

Charles A. Kumnick
The Mini Gallery, The Newark Museum, Newark, NJ
December 6, 1981–January 17, 1982
by Carolyn Kriegman

The Newark Museum's Mini Gallery offered the ideal space to effectively present Charles Kumnick's work. His 10 pieces were in comfortable scale with their surroundings, each achieving a separation and distinction from its neighbors.

It was tantalizing to muse as to whether metal had seduced Kumnick, or whether it chose to submit benignly to his will, so facile was the outcome, but it was obvious that a love affair is in progress. Kumnick's introduction to his catalog of work alludes to metal as "challenging and stimulating. Each metal has its particular physical properties and expressive characteristics." He enjoys "the process of becoming acquainted with these qualities, combining them in ways that integrate and complement each other." The statement itself is without contradiction, as responsible artists seek to work in partnership with their materials, without violation or compromise. Kumnick takes conservative steps forward, supported by his extensive training and enlivened by a provocative and analytical curiosity.

Despite a sense of incipient energy lurking beneath an aura of elegance, Kumnick always stops short of succumbing to elaboration. He consistently sidesteps the temptation to flaunt his virtuousity, though each piece is redolent of his commitment to and intimacy with technical fluency. None of the works takes off in a totally independent direction, however, and there are reminiscences, as with all emerging artists, of work seen, studied and esteemed. Concurrently, there is a trajectory past that level, proof that an individual style is developing, gaining confidence and identity.

Charles Kumnick, *Ming,* steel, copper, 24k gold-plated brass, Pyrex glass tube with ground glass stopper, sterling silver, 16 x 3 x 3"

Unfortunately, the gallery presentation did not include the dates of the works' completion, making that evolution harder to track, but ideas that led from one piece to another attested to an appetite for growth, paralleling an awareness of something new as it occurs. Kumnick sets up a plan, pursues it and takes notice when invention or even accident intercedes to change the forecast. He takes full advantage of those gifts, applying them to a piece under way or reserving them for the focus of a work to follow.

Warpage of metal surfaces under heat and stress became central to *Pandora,* presenting opportune deviation. Two black steel panels, erect front and back, projected in central geometric echoes. Its completion led directly to *Monarch,* for which Kumnick had to develop special techniques and clamps to maintain the strict rigors of the two steel slabs placed back to back, adorned with copper, brass and sterling, and the torn, punctured, deceptively fragile sheets sandwiched between them.

Intriguing also, technically and visually, were Kumnick's five vessels, larger-than-life perfume bottles, which disguised their practical purpose within dramatic sculptural exteriors. *Foliad,* one of the largest pieces in the collection, pewter, iron, 24k gold electroplated brass and sterling silver, was an impressive regal form rising sleekly from its wrought iron base. The pewter vial culminated in a layered, leaved opening, topped with a lathe-turned wand spiralling skyward, intricate in detail, simple in overview. It was the only work in the entire group, however, where a small element of indecision interfered, as one of the "foliads" encircling the neck of the vial bore a surface that was self-consciously organic, an obstruction to the exceptional control elsewhere. *Ming,* a brooding, monklike form, wrapped two capes of protective steel around fluctuating surfaces of copper, gold-plated brass and sterling silver, and a Pyrex glass tube with ground glass stopper, all suggesting an interior of soft, luminescent pliability. *Foliar Vessel* boasted a raised, vaselike pewter tube set into a curvilinear forged-iron base, culminating in undulating layers, repeated in the stopper. Every surface, as in all of Kumnick's pieces, was meticulously polished His dedication to the sanctity of surface forced him to design his pieces for assemblage via hidden screws and bolts, so each section can receive the specialized finishing treatment it requires, while not affecting an adjacent material adversely.

For *Night Moves,* Kumnick has written himself a set of "reminder" instructions, as its assemblage is so complicated. He can readily disassemble and reorganize its dual orbs of raised, forged and lathe-turned copper, brass, iron and silver, set with a carnelian. The work hovered over its own steel base, and was "bifurcated" by voluptuous, glossy, sinuous edges that suggested a formative explosion taking place in slow motion.

The exhibition presented a handsome group of ambitious pieces, visually and esthetically cohesive, by a determined, scholarly and inventive metalsmith in possession of a distinguished list of grants and awards and destined for many more.

Gary Griffin
Helen Drutt Gallery, Philadelphia, PA
September 22–October 10, 1981
by Amy Davison

Gary Griffin, *Construction 81-4,* steel, plywood, glass, paint, 94 x 24 x 24"

Recently, Gary Griffin's work has dramatically changed in character and especially in size. Once jewelry and small objects, his work is now dominated by lifesize sculpture.

The following interview took place on the occasion of Griffin's one-man show at Helen Drutt Gallery.

Davison: I sense in your work a controlled but irrational sorting out of dream-oriented references. Do dreams and the subconscious play a role?

Griffin: Dreams don't seem to play an important role, as I don't remember them, but the subconscious does. Many times when I make an element, I will recall what was inspirational. Often, this is hard to pinpoint.

Davison: The elements seem to relay symbolic messages. Your use of cups, plastic roses and ladders can be interpreted in many ways. For instance, cups traditionally imply love, hope, joy, celebration or fulfillment.

Griffin: I don't make decisions on that basis. I know that certain components can be suggestive of ritual. The plastic rose is more sentimental than any of the other elements. The rose is classical to me. It's touching, dignified and has nothing to do with kitsch. My initial interest in the cardboard cups was that they were to be thrown out as trash (these were originally spools for yarn). I continue to elevate the use of disposable items, which makes reference to my prior work.

The works are personal metaphors in which my life and all my experiences are represented. Some events, such as having children, have had a profound impact. My new work has become more sentimental, in-

timate and based on emotion. My prior work projected a cool manner. They were more guarded; now the work is more revealing, although still impersonal. Geometric shapes, severe forms and machined parts remain aloof and anonymous. They represent an industrial format which connects with my past pieces.

Davison: Can you comment on the intellectual aspect of your work?

Griffin: In my definition of constructivism, as opposed to a more naturalistic viewpoint, the elements are placed according to intellectual considerations. Foreign, clashing or harmonious parts are adjacent solely because I've chosen them to be there. There may be many reasons behind their placement, but the decision is intellectual and not based on cause and effect, like a river which naturally wears down its banks. With the constructivist attitude in mind, I have the license to put any form next to any other that may not relate or flow nicely.

I feel the work should be informative without repeating content which is commonly known. A smooth, flowing tapered form in one of my pieces can have all the indications of leading to a fine resolution, but then it will abruptly stop. Stories, as an analogy, can end nicely, but it's refreshing to be surprised with an unexpected ending. Again, this repeats a constructivist attitude, one which may utilize eclectic peculiarities.

Davison: How does history motivate you?

Griffin: History has always buttressed my thoughts. Historical furniture, such as Louis XIV and Victorian, are influential. Renaissance and Baroque metalwork are of importance in their decorative qualities and excessiveness.

Davison: How does your work compare to furniture?

Griffin: There's a lot of furniture which is really not used in a home. Left empty, the furniture generally becomes form and space around you. My work, if in the home, is useless. I enjoy this aspect, as the major purpose is purely decorative. The home as a private domain for my work has gained importance for me. Somehow, museums can become a stash of objects or commodities.

Davison: What do color and human scale mean in this body or work?

Griffin: The colors are very dense, thus remaining impenetrable and cosmetic. They are brilliant and basic, festive and gay. Some pieces do carry anatomical references because they are of human scale and proportionately draw on that relationship.

Davison: What is your allegiance to the materials and processes used?

Griffin: I don't have an allegiance to any one material. I incorporate glass, wood, cardboard, plastic, etc. My use of metal primarily is out of pure interest and the personal challenge I find in working metal.

1981 Selected University Metalsmiths

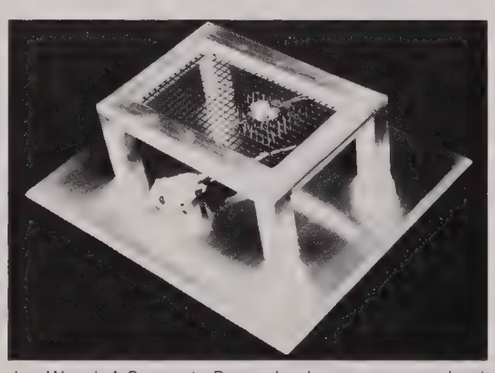
Norman R. Eppink Art Gallery,
Emporia State University, Emporia, KS
October 26–November 17, 1981
by Garry Marsh and Kathryn Rippeteau Smith

For the past two years the Norman R. Eppink Art Gallery has organized an exhibition of works by faculty and students from university metalsmithing departments across the U.S. The first year the exhibit consisted of work from Montana State University, under the direction of Richard Helzer, and from the University of Southern Illinois-Carbondale, under Richard Mawdsley and Brent Kington. In 1981, faculty and students from the University of Washington-Seattle, under Mary Lee Hu and John Marshall, and Kent State University, under Bruce Metcalf, were chosen to exhibit their work.

Skip Gaynard, *Two-Cup Teapot,* silver and delrin

This type of exhibit has great value as a teaching tool. The work of other metalsmiths is as important to a metals student as are a saw and soldering torch. The student work exhibited provided Emporia State students with a peer group comparison, a better measure than comparing themselves to long-time professionals. Through the study of what others have done, ideas are generated, techniques understood and growth takes place. An instructor is able to critique and explain the use of various materials, different stylistic approaches and techniques through the actual object. This eliminates the problem of explaining a three-dimensional medium with two-dimensional slides. Student work at each school is clearly influenced by faculty members. For this exhibition, the likenesses and differences may be studied to provide an understanding of attitudes or ways of handling materials and variations on themes.

The two universities featured this year were in general quite different from each other. However, the craftsmanship and understanding of materials displayed by all of the work sent were expert. The Kent State students and faculty tended to create nonutilitarian metalwork, made up of assembled parts, with hard, clearly defined edges. In contrast, the majority of work from the University of Washington was utilitarian, ornamental or wearable. The forms were twisted or raised in ways not natural to metals, the patterns becoming more important than the medium or function of the object.



Joe Wood, *A Separate Buzz,* aluminum, copper, mixed media

Two works included in the exhibit deserve closer study. *A Separate Buzz* by Joe Wood of Kent State University was a small, sculptural piece made of aluminum, copper and mixed media. The title implied an unnatural, or perhaps supernatural, stimulation, and the grid pattern of copper wire on the tablelike structure reinforced this feeling. This stimulation might be a type of mystical or metaphysical force that transforms objects placed on the table/grid. The materials used—broom straws, bits of steel wool, wood and acrylic—were carefully selected for their textural and visual qualities as well as their psychological impact—organic materials at the mercy of the cold copper and aluminum of the table-grid. Purely nonfunctional, this piece departed from traditional ideals in metalsmithing of creating something useful as well as beautiful. Instead, the mixture of materials depicted a mysterious and somewhat threatening image. What were the cocoonlike forms and what was their relationship to the table/grid? The juxtaposition of these forms was disturbing because the table/grid connoted technology and the future while the cocoon seemed primitive and decayed, used up. The viewer was forced to wonder which would dominate, which would remain.

Other works in the exhibit were traditionally functional. One of these was *Two-Cup Tea Pot* made of silver and delrin by Skip Gaynard of the University of Washington. While reflecting the tradition of fine craftsmanship in metals, the teapot was designed for the 20th century. Thrust into space, it seemed weightless, although securely anchored to reality by its stand. The design of the teapot is futuristic as is Joe Wood's work and both artists draw on modern design concepts and techniques. However, each artist has used these futuristic concepts to work within his own artistic vision quite successfully.

The skills and sensibilities of good metalsmithing were displayed in these two works, as they were in all of the pieces exhibited. The horizons of students, faculty and interested museum visitors have been broadened by being able to see what other university programs are doing in the field of metalsmithing.

Helen Shirk: Linear Sketches

Janus Gallery, Los Angeles, CA
November 7–28, 1981
by Ruth T. Summers

The powerful boldness and highly developed skill of Helen Shirk was well stated in this beautifully mounted exhibition, which included sixteen brooches in combinations of copper, silver, titanium and gold.

The tubular linear form was dominant in the brooch series, with color being added in two brooches by the introduction of fine-gauge rods of copper and silver, soldered together to form a spiral pattern. Eight of the brooches contained silver, gold and titanium electrically oxidized to rich hues ranging from purple blue to shocking pink. The brooches contained small roller-printed designs on gold and silver sheet and the textures were reminiscent of raindrops on window panes, the rods and spears of colored titanium appeared to move through space. Six brooches consisted of silver forms and colored rods of titanium extending in front of and beyond the nonreflective silver.

The brooches and their specially designed plexiglas cases conveyed a technical statement about Helen Shirk and her strong

academic background in metal, including a B.S. Degree (1963) from Skidmore College, New York, studies at the Kunsthaandvaerkerskolen in Copenhagen, Denmark, under a Fulbright Grant (1963–64) and an M.F.A. from Indiana University in Bloomington, Indiana.

Helen Shirk, *Linear Sketches* brooch, silver, copper

New England Pewter Today
The Society of Arts and Crafts, Boston, MA
November 6–27, 1981
by Jamie Bennett

There seemed to be a carefulness in this exhibition not to disturb the heritage of pewter. With over 100 pieces by some 15 pewtersmiths, there was little variation from the historically derivative theme.

Fred and Judi Danforth, *Tureen*, pewter and wood. Photo: Tony Keppelman

Much of the Early American styled work was well executed in the traditionally associated processes of spinning and casting. The pieces which were the least successful were those that tried to force a liason between the traditional and a touch of the contemporary. James Seavey's *Coffee Pot*, a rather large, incongruous melange of elements exemplified this point. Barrie Cliff, on the other hand, offered a choice with one *Contemporary Tea Service* and another *Traditional Tea Service*. I should point out in fairness that both were well executed and a fair representation of the suggested styles.

James Gagnon and Shirley Charron made the most obvious breaks from the Early American motif. Gagnon's work was reminiscent of ceramic weed pots with little pinched openings, although his pieces were a bit larger and slicker than normally associated with that particular format. Charron, the author of *Modern Pewter*, offered rather uninspired organic sculptures, which, although a departure from the mainstream of the exhibition, were not rewarding.

The strongest work in "Pewter Today" was the collaborative efforts of Fred and Judi Danforth. Their pieces were near classical examples of Early American pewtersmithing with some accommodating additions, such as an electric lamp. There was no pretentiousness to the Danforth work. It was meticulously executed and unashamedly designed to look like Early American pewter

The remaining pewtersmiths in the show generally followed a traditional course, although seemingly not as familiar or as comfortable with it as the Danforths. Much of the work was production-oriented and for that reason kept rather simple and refreshingly direct.

Probably the significance of "New England Pewter Today" lay not particularly with the merit of these works but with the unfortunate imbalance of approaches to the medium. On a national level pewter has been practically abandoned by metalsmiths, with the exemplary work of Fred Fenster as an exception. By and large pewtersmithing has remained synonymous with 1776 and little effort has been made to change this stereotype. Perhaps this exhibition, curated by Ann Jones, and others she will organize in the future,can act as a catalyst to generate a broader approach to pewter.

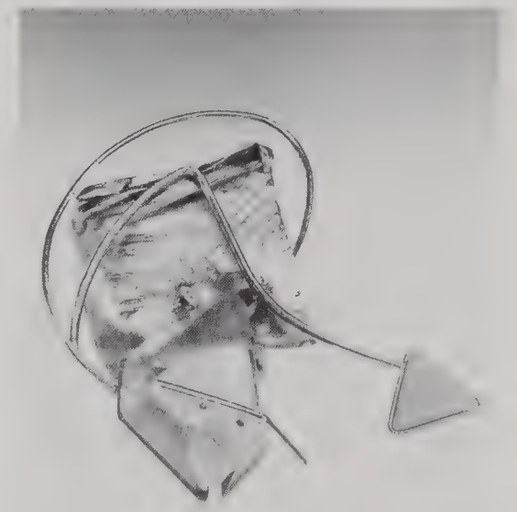
Barry Merritt: Variations on a Theme
Gallery of Contemporary Metalsmithing, Rochester, NY
November 20, 1981–January 16, 1982
by Laura Stewart

Barry Merritt's first one-man show in three years consisted of 30 pieces that restated innovatively and splendidly this goldsmith's love of precious metals and materials, as well as his sensitivity to wearability. Because only two of the pieces existed before September, "Variations" was unusually representative of the artist's newer, more elegant style, which is expressed here in geometric terms. Three years ago Merritt worked with open and closed areas and with seashells; now his objects are typified by solid planes and the use of pearls and other soft gems.

The synthesis Merritt achieved in this show by texturing, mounting colored gems one on top of the other and blending areas of gold and silver, made his women's jewelery (earrings, brooches and necklaces) appealingly tactile. As in his men's cufflinks and belt buckles, surfaces were painterly, concentrating primarily on color and the play of light and shadow across their contours. However, as was abundantly evident in works like *Brooch*, Merritt's concern for his works as independent objects in space was not neglected. *Brooch*'s use of circles, squares and triangles epitomized the show's theme; in this variation, Merritt interpreted them as if *Brooch*'s two gems, a rutile quartz and a blue-green opal, were stylized buds twisting on an 18K gold whiplash vine across his characteristically abstract, even runic, silver backdrop.

While Merritt's small sculptures were eminently wearable, they were far from cautious. *Necklace*, one of "Variation's" sensational highlights, was made up of a series of textured, hollow silver tubes, randomly ornamented with areas of polished or roughened nuggets of 18 to 24K gold. Merritt's craftsmanship was impeccable, as was his overall conception of the piece. While *Necklace* was a powerful object when displayed in its case, its full potential was realized only when it was set in motion on the human body, catching and reflecting the light.

Perhaps the most characteristic piece in the show was the relatively small and quiet *Brooch with Turquoise*. Although like an expressive, understated landscape in appearance, its sculptural aspects were equally satisfyingly considered. Here Merritt used texture and hue evocatively, balancing image and form with other concerns: craftsmanship, wearability, practicality, longevity and beauty, both on and off the wearer.



Barry Merritt, *Brooch*, gold, silver, opal, quartz. Photo. Wayne Calabresi

That Merritt considers his concept and materials of primary importance was evident in this sophisticated, tightly knit exhibition. Although still painterly and organic in essence, his exquisite, advanced treatment of precious metals and gems represented a new direction from his fetishistic or humorous statement objects of 10 years ago or the more ornamental, sculptural jewelery of his last show. "Variations" captured the spirit of this serious, cohesive stage in Barry Merritt's 20-year evolution as a professional metalsmith.

Invitational Show
The Gallery at Joel Bagnal, Wellesley, MA
November 10–December 24, 1981
by Vincent Ferrini

This invitational show of the recent work of 27 prominent jewelers, enamelists and a pewtersmith at Joel Bagnal's elegant goldsmithing shop and gallery seemed perfectly in tune with the Christmas season, because selling was the aim of all concerned. And why not? The work was generally well made and simply but effectively displayed in handsome natural oak and glass wall cases.

The overall effect, despite many pieces and styles, was quietly interesting with a tinge of deja vu. There were subtle variations within each craftsman's collection of work as well as major differences between artists, however, no one collection or piece really stood out as

being totally new or terribly exciting. On the other hand, there was something of quality and interest for every taste.

Carrie Adell led my list for the most salable and cute objects. Her tiny bunches of sterling and gold garlic buds, humming birds and bees ought to have pleased many a Wellesley coed. Cheri Epstein's tiny, delicate enamels were also quite salable. But why did Lisa Gralnick spoil her potentially successful abstract-pictorial enamel pendants with pink pearls on the ends of all the silver chains?

Paula Dinneen showed her characteristically elegant and beautifully crafted earrings and bracelets of sterling with controlled overlays of 14k yellow gold stripes. Karen Hall also used stripes and roller-printed ridges in a hard-edge series of triangular sterling with acrylic brooches. Beverly Sahn, also of the hard-edge persuasion, showed sleek, layered, multimetals pieces. Her visible mechanical connections seemed quite appropriate to her style. Jaime Pelissier's clean, precisely articulated chains and rings echoed Scandinavian design, while David LaPlantz's entries seemed very American high-tech. His series of brightly colored, anodized aluminum brooches evoked a cool, mechanical, "with-it" look.

In contrast to the hard-edge approach was the soft, swirling, almost Art Nouveau series of sterling and carved, clear plexiglas pins and pendants by Anne Besse-Shepard. This shimmering quality also appeared in several of her better enamels. Rena Koopman set her own style with delicately intricate mixes of colored golds and sterling. The tiny dots and dashes of married metals in earrings, pins and rings was enhanced by softly sandblasted surfaces and some contrasting polished areas.

At opposite ends of the spectrum in enamels were works by Jill Bresky and John Reynolds. Bresky showed tiny, controlled 14k yellow gold pieces, enameled in delicate colors with stripes of gold enhancing the champlevé technique. Reynolds, on the other hand, used considerably larger and bolder constructed forms in sterling and copper as bases for his moodier, intricately detailed abstract landscapes. A particularly successful piece of Reynolds's bold enameling appeared on a large constructed pendant of sterling, gold and ivory which was hung from a multistrand choker of ivory beads. This piece, designed and partly fabricated by Joel Bagnal, finished and enameled by Reynolds, was the first in a series of collaborations by these two artists.

It seems fitting to mention the work of James Yesberger in summing up the show. He had something for everyone, too, from a square, ridged lapis atop a curved container-like gold pendant with garnet "eyes," to a unicorn ring, to a carved jade pendant supported by a cord terminated with two gold ducks.

John Reynolds and Joel Bagnal, necklace

Washington, D.C. and Environs

Good as Gold: Alternative Materials in American Jewelry

Renwick Gallery, Washington, D.C.
December 3, 1981–March 28, 1982
by Jan Maddox and Gail Goldman

Candace Loheed for Parrot Pearls, *Large Tropical Fish* neckpiece, mold-formed low-fire ceramic

"Good As Gold," organized by the Smithsonian Institution Traveling Exhibition Service and curated by Lloyd Herman, Director of the Renwick Gallery, featured the jewelry of 92 artists working with materials alternative to precious metals. While in Washington, D.C., the exhibition was enhanced by slide presentations during the opening weekend of approximately 28 artists represented in the show.

Although "Good As Gold" received mixed reviews by craftsmen and the public, a show of this breadth, by nature, must be viewed with the understanding of certain limitations. Restrictions imposed by the demands of a traveling exhibition coupled with the intent of the show to survey all aspects of nonprecious metal jewelry had to be considered when viewing the show. The show succeeded in presenting a high quality of craftsmanship and a variety of approachs, expressions and experimental techniques. It also represented both established and new artists, which was particularly refreshing to the D.C. audience.

In spite of the strength of the work selected, there were certain disappointments. Many of the cases were simply too crowded. Much of the imagery was lost, particularly the smaller pieces, as a result of the restricted space. Confusion was further compounded by the locations of many of the labels in relation to the pieces. Some of the cases at the Renwick were placed too high and most of the viewers had to strain to see the work.

The catalog accompanying the exhibition is reasonably priced with many color illustrations and an interesting and informative essay by Lloyd Herman, in which he discusses the historical background and characteristics intrinsic to the various materials highlighted in "Good As Gold." The highly illustrated catalog serves as a valuable record of the show. However, the juxtaposition of pieces within the photographs, the unexpected shifts in scale from page to page and the inconsistency in the quality of the photographs do not adequately compliment Mr. Herman's essay.

Local press coverage for the show, and particularly for the slide presentations, was inadequate. Most of the lectures were excellent and all were worthwhile, providing an opportunity for exchange of ideas and techniques among those present. Because the event was not well publicized, many people missed this unique opportunity to hear exceptional craftsmen from all over the United States. Unfortunately, this is a recurring problem in the Metropolitan Washington area.

Novel in its orientation, "Good As Gold" explored the range of activity in contemporary American jewelry. From funk to high-tech, from conservative to the unexpected, the viewer was introduced to an exciting, new approach to jewelry being produced today.

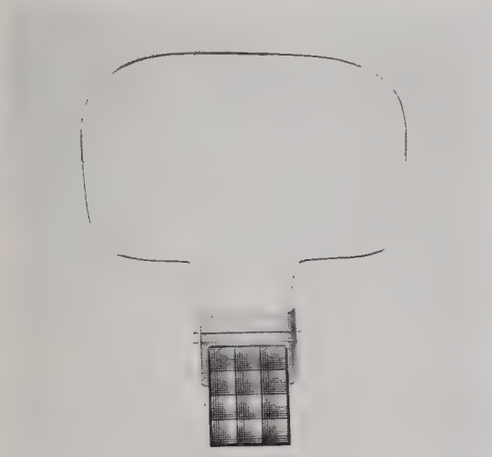
Laurie Hall, *Welcome, Cicada* neckpiece, Japanese paint brushes, copper, sterling silver, thread. Photo: Paul Kennedy

Many other crafts galleries in the D.C. area sponsored exhibitions concurrent with the Renwick show that stressed the theme of alternative materials in American jewelry. These included the Barbara Fiedler Gallery, Plum Gallery, Zenith Gallery, Smull's Gallery and Gifts, Full Circle and the Gadfly. Beginning

with a marvelous party at the Renwick, the openings and other related social events created a flurry of activity within the crafts community. The happy reunions and new introductions among craftsmen and patrons from all over the country was especially important. Indeed, a good time was had by all.

"Good As Gold" will travel extensively until 1984 throughout the United States; some projected dates and locations are: Olglebay Institute, Wheeling, WV July 24–August 22; SUNY, New Paltz, NY, September 11–October 10; Nicholayson Museum, Casper, WY, October 30–November 28. For more information and to obtain a copy of the catalog ($5.00), write: SITES, Smithsonian Institution Washington, D.C. 20560.

All That Glitters is Not Gold
Plum Gallery/Kensington, MD
November 15–January 5, 1982
by Gail Goldman

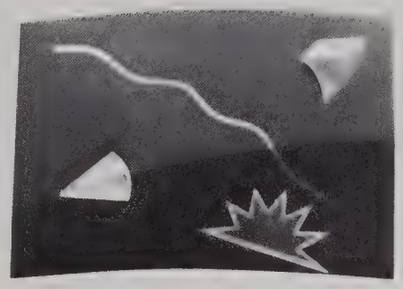


Gretchen Klunder Raber, *Microgrille II* necklace, nickel-plated brass. Photo: Paul Kennedy

The Washington, D.C. community of collectors and artists knew that the Plum Gallery in Kensington, Maryland was interested in representing American jewelers and metalsmiths. Long acclaimed for consistent high quality in paintings, prints and three-dimensional work including crafts, the Plum Gallery delighted its audience this time with an impressive exhibition of contemporary metalwork.

Thirteen of the nation's most outstanding jewelers were invited to be part of the Plum's first invitational jewelery show, "All That Glitters is Not Gold": Helen Banes, Arlene Fisch, Ron Ho, Mary Lee Hu, Belle and Roger Kuhn, Rebekah Laskin, Stanley Lechtzin, Richard Mawdsley, Bruce Metcalf, Ronald Hayes Pearson, Gretchen Klunder Raber and David Tisdale. All of these artists are included in SITES "Good As Gold" which ran concurrently at the Renwick Gallery.

Works in brass, aluminum, titanium, copper and fiber as well as precious metals added new dimension to the smaller rooms of the gallery. The jewelry was displayed well, easily visible and conveniently grouped by artist. Most of the work was successfully presented on stepped platforms or suspended from vertical dividers. However, there was some compromise in the ability to view pieces without distraction when displayed flat, particularly with the work of enamelist Rebekah Laskin where the strong individual quality of each piece became merged with those adjacent to it.



Jeffery Krolick, *Brooch*, mild steel with brass, bronze, and silver inlays. Photo: Paul Kennedy

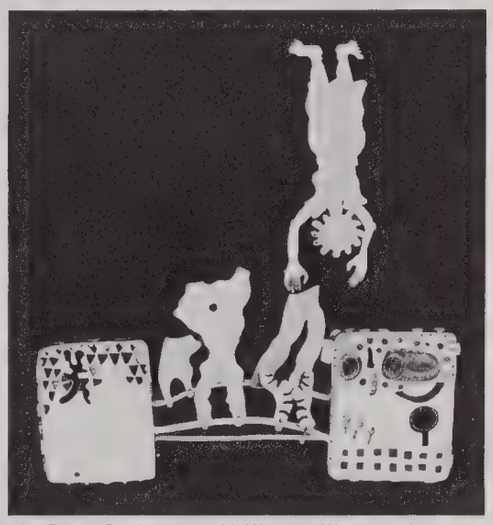
Familiar with the many well-established and reputable artists included in "All That Glitters," the Washington craftsmen were treated for the first time to a formal presentation of the work of David Tisdale whose extraordinary design ability well complimented his colorful interplay of anodized aluminum, and of Rebekah Laskin whose accomplished skills were illustrated by the sophisticated graphic quality and subtle colorations of her enamels.

Well attended by artists and patrons alike, "All That Glitters is Not Gold" was a special acknowledgment of the growth and importance of contemporary American jewelry in the Metropolitan Washington area. The proprietors of Plum Gallery deserve recognition and thanks for taking the time to thoughtfully research and prepare for this show. Their commitment to jewelry and metalwork is evidenced by their exhibition calendar, which continues to feature the jewelry of different artists on a regular monthly basis.

A Touch of Gold
Barbara Fiedler Gallery,
Washington, D.C.
November 21–December 22, 1981
by Gretchen Klunder Raber

Rachelle Thiewes, *Ear Wrappings*, 14k gold, silver

The climate in Washington for the last months of 1981 was hot for jewelry. The parent luminescence was the Renwick Gallery's "Good as Gold" show. Several local galleries and shops featured artists from the show. One exceptionally sophisticated presentation was organized by private art dealer Shelly Guggenheim at Barbara Fiedler Gallery. It was and remains a most interesting concept for a marketing technique. Metalsmiths should give consideration to being associated with a private dealer who has, as does Ms. Guggenheim, a talent for putting together a visual continuity with the people she represents. The pieces that were exhibited evidenced a cohesive, knowledgeable viewpoint. The dealer concept can be a positive format for representing artists, for client contact, for career development. It is one avenue to the total development of a favorable climate for metal.



Kim Bass, *Clothesline with Washer-Woman*, pins, enamel, gold

So infrequently do metal artists consider the space we are exhibiting in or the relationship our work will have with other artists'work. This was one of the show's most salient features. The show was tight, nothing extraneous—11 people exhibiting their best, of which gold was, incidentally, a part.

Some of the show stoppers were the work of Whitney Boin—absolutely stellar minimal statements of white acrylic and black ink tracings. Lathed geometric forms by Victoria Howe took futuristic precision to esthetic heights. Superior personal statements by Howe signal the advancing quality of American metalsmithing. Especially remarkable was the superbly subtle series by Pat Flynn. Although of miniature scale the imagery had the most monumental nomenclature. Flynn is a master of varied materials and surface treatments. He uses slate in sensitively sculptured forms enhanced with penciled and painted colors. Rachelle Thiewes is one of the few metalsmiths who uses woven metal with technical proficiency and esthetic accomplishment. Masterful describes Thomas Gentille's approach to sculptural forms. His unusual use of materials such as ostrich egg shells was meticulously carried out. Other remarkable pieces included the astounding carved ivory pieces of Cary Stefani (even though I personally boycott the use of ivory), Bob Ebendorf's folded plate constructions with magically iridescent thread, Ivy Ross's powerful structural colored titanium bracelets, Gene and Hiroko Pijanowski's coloristic narrative objects and the well-handled humor of Kim Bass in her enamel work.

Sheffield Degree Show 1981
Sheffield City Polytechnic
Sheffield, England
by Barbara Young

Student work of any country can be a very revealing commodity, well worth examining. Such products reflect the educative principles and the student's reality more clearly than any school catalogue or syllabus. And in a larger sense they bring one, intentionally or not, very close to at least some of the national traditions, ideals and current persuasive interests. Interpreting these values is never quite as simple as it appears. But some of those traditions, ideals and interests last a lifetime, so they are scarcely negligible. In retrospect they will be read as style.

Unfortunately, reviews of student degree shows are frequently less than penetrating; either it was a good year, or a bad year, or just what you would expect under the tutelage of so-and-so. In time, a place itself can get a label for a particular kind of approach. Some lecturers teach with a heavy hand, but they are not always the cause for labels. Sometimes students engage in self-directed faddism which can be sparked off by any one of a number of things—an important exhibition, a recent competition win, even the lecture of a notable visiting artist. The variables are many and constantly changing; no two classes are alike, as all lecturers know. To best understand a given degree show one really must appreciate the ideals espoused by the staff in order to understand how the students' efforts were being directed.

One has only to look at the graduation shows of metalwork in America and in Britain to realize that the value systems implicit have generalized national characteristics. And, like it or not, we all tend to read in whatever values we are working with. That's natural, but it also means that sometimes one reads very strange things written by critics crossing the Pond in either direction when their usual yardsticks are brought out for measuring the foreign product. It is for that reason that something of the climate at Sheffield is being described prior to looking to individual work from this year's Degree Show, in hopes of giving a little insight into an English approach to teaching in the field of metalsmithing.

While the course is not given to predictability, nevertheless Sheffield has a very definite personality. The city itself is located far enough away from London to not be caught up in a provincial carbon-copy syndrome, and the staff is too willful to let it happen.

The city of Sheffield is really more like a large town and one of considerable character, open, progressive, friendly, even a bit folksy to an American, in ever so nice a way. The students are expected to work hard and equally they are expected to play hard. Those who don't manage both are considered to have failed the opportunity which the course afforded them. Seldom in there ever a dyed-in-the-wool loner in a class. The students are together all day in a congenial atmosphere, even taking their scheduled coffee breaks in large groups. They can be found sitting at their usual tables, having staked out their territory in the canteen. While they spent some time establishing their pecking order in the first year, there is a remarkable lack of intra-class competitiveness by American standards.

The students spend a great deal of time sorting out their ideas on paper before ever reaching for the metal. The official objective of the course is to produce a designer, and whatever else he learns to do, he must be able to draw. It would be unthinkable to begin a form without at least some drawings, and most projects have been illustrated many times and perhaps by means of several different drawing methods. Another source of stimulation comes from the lecture course on the history of metalwork which runs through the three-year program and includes discussion of contemporary work as well.

In the final year of the course, the student chooses his major project. This is obviously a decision of utmost importance, since the weight of his entire degree is wrapped up in this final year's work, even though he may choose to show work made in his first and second years in the Degree Show. The drawings for proposed projects are still subject to the criticism of the class tutors. Open crits are not held; students do not formally present their work to each other with staff on the sidelines. The staff members (there are two for each year) take it as their responsibility to assist the student towards realization of his special strength and individual expression. Yet still within this framework the unexpected happens.

There are always surprises among any group of students in a final year, promising ones not blooming as expected and quiet, steady ones delivering more than had seemed possible. The code of behavior at Sheffield tends to throw off the judgment of even the most attentive tutor, either that or they do a very good job of not letting on. The lack of open crits certainly contributes to preserving a kind of privacy among the students, for better or worse. Despite the fact that they spend a great deal of time together, they do not, so they tell me, discuss their ideas about their work with each other.

Possibly one of the reasons for this balance struck at Sheffield between a highly structured course, lack of multilateral discourse and ultimate development of confident and independent students goes back to who is chosen to enter the course. The key factor probably is evidence of teachability—is the candidate able to sustain criticism, absorb it and, at best, use it—on the spot. Know-it-alls have to apply elsewhere. The student population is thus basically a fairly confident group to begin with, one ready and willing to acknowledge his own and others' successes and failures with amazing equanimity. These are not temperamental students.

Certainly something of this temperance and thoughtful approach is reflected in the student work. By the American measure English metalsmithing is at times considered quiet, unadventurous, perfect, even a little too perfect at times. That may be true by American values, but it is absolutely unilluminating criticism by British standards. The American and British methods of teaching and their objectives are fundamentally different, and their product, the students, face radically different realities. It goes without saying that American students and British students are products of their cultures, equipped by and large appropriately for functioning within their own cultural dynamics. This last point never seems to get enough attention. Americans tend to not treat England as a foreign country, a mistake Britons in coming to the U.S. do not make.

Without question, one of the most decisive factors creating these different climates is economic, a factor to which art education, is and likely always will be, extremely sensitive. In recent years international economic changes have had powerful effects on shaping values and objectives within both countries. However, England did not enjoy the exhilarating effects of great affluence through economic growth and expansion as the U.S. did in the 50s, 60s and early 70s period. Secondly, the effects of the current recession have severely eroded the British economy and drastically changed marketing expectations for the silversmith and jeweler.

The field of higher education has been seriously affected as well. Relatively few students go on to graduate work in the field. They have to make the single three-year degree count for a lot. In light of this sober reality, quite understandably the student is preoccupied with the objective of selling his product. He has to become professional very fast, thus his important decisions tend to contribute to achieving this objective. Recognition through exhibitions and shows, which directs so much energy of the American student, is not for him an ideal which carries much weight. It is true that overall there are far fewer opportunities for the British student to show, and on the other hand, there appears to be relatively more competitions to enter and prizes, sometimes substantial, to be won. At Sheffield, competing for these national competitions is worked into the course program, and it pays heavy dividends for some Sheffield students every year. The most important competitions are set up by industry requiring industrial prototype designs. Despite this direct contact with industry, students never seem to come forward and declare that they want to design for industry (though some eventually do). Sadly, that seems to run counter to the idea of being an artist/craftsman in both countries.

It would be impossible to ignore the fact that traditional values act as a powerful operant in the field of British metalsmithing. There is simply no parallel to cite in America. One aspect of this tradition which carries forward, and very much affects the esthetics of British metalwork, is the relationship between the uses of hand and machine processes. The British student works more closely with machine tools and processes than does his American counterpart. He designs with that potential well within view. Whatever the reasons are, the fact remains that the British student strives for a look that is recognizable, one that bears a stamp of professionalism, and machine processes are fairly indispensable in creating this kind of product. To that objective even average students apply themselves vigorously to painstaking research, carefully documented in technical notebooks bulging with data, sketches and even glued in samples of metal.

A final general observation to be made is one regarding our differences in scale of expression and materials used. It is commonly appreciated that the scale of American work, especially that of jewelry, is enormous compared to European standards. In these recession years, however, even the English sense of scale and lightness has reduced significantly. This reduction in scale is being carried still further by the current interest in light, apparently volumeless forms and the use of perforated sheet and wires. As to materials used, most holloware produced by the students is made of gilding metal, which is later silverplated. Some jewelry is also made in the same way. The overriding factor in designing is anticipating the cost of production. The students, most all of whom are on government grants (which increase post-inflationary leaps), feel the pinch more than they know. They simply live it.

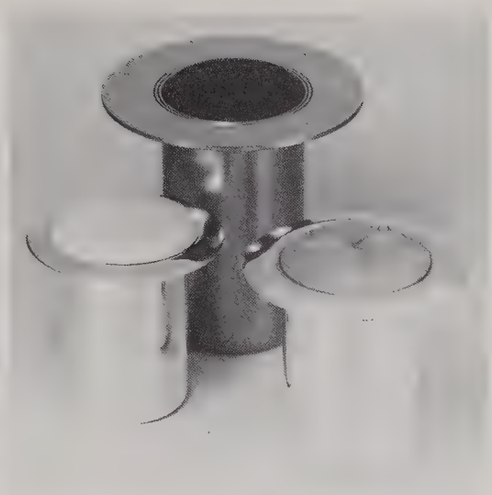
In summary, it is fair to look to this work produced by recent graduates at Sheffield as typical. They all reflect thoughtful design, well researched techniques, and beautiful craftsmanship. The average quality of the class is consistently high. There is no sharp gradient from the best to the least. Thorough, systematic assessment carried out by the entire staff maintains Sheffield's standards. The student must meet them or loose his place on the course and likely his right to a grant.

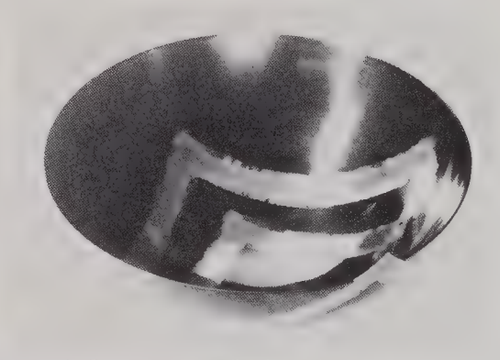
The brashness and at times sheer audacity sometimes found in American student work is seldom present. While the British student fervently seeks to express original ideas and make a name for himself, he expects it to take longer than his more impatient American cousin wants it to be. He simply has a different sense of timing and at heart he is less competitive. Meanwhile, he is acutely aware of the tradition within the field of British metalsmithing, wants the seal of approval from within and eventually, and only then, does he expect recognition on his own terms.

Loot VII
Goldsmiths' Hall, London, England
November 2–21, 1981
by Chris Correia

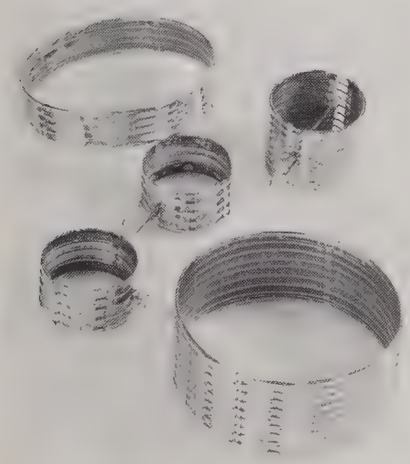
On display at "Loot VII" were 720 pieces divided into separate sections of jewelry and silversmithing. The jewelry was offered in four categories—platinum, gold, silver and mixed media—while the silversmithing was labeled "silver and objects." Although traditionally "Loot" has been associated with items selling for less than £100 (under $200), this exhibition contained a platinum necklace with 31 diamonds by Len Wilson priced at £3,950. On the other end of the price spectrum, Evan Hunter-Smith displayed a brass ribbed bangle for £6.50, and a set of five of Louise Slater's brightly colored wood and plastic bangles were £18.

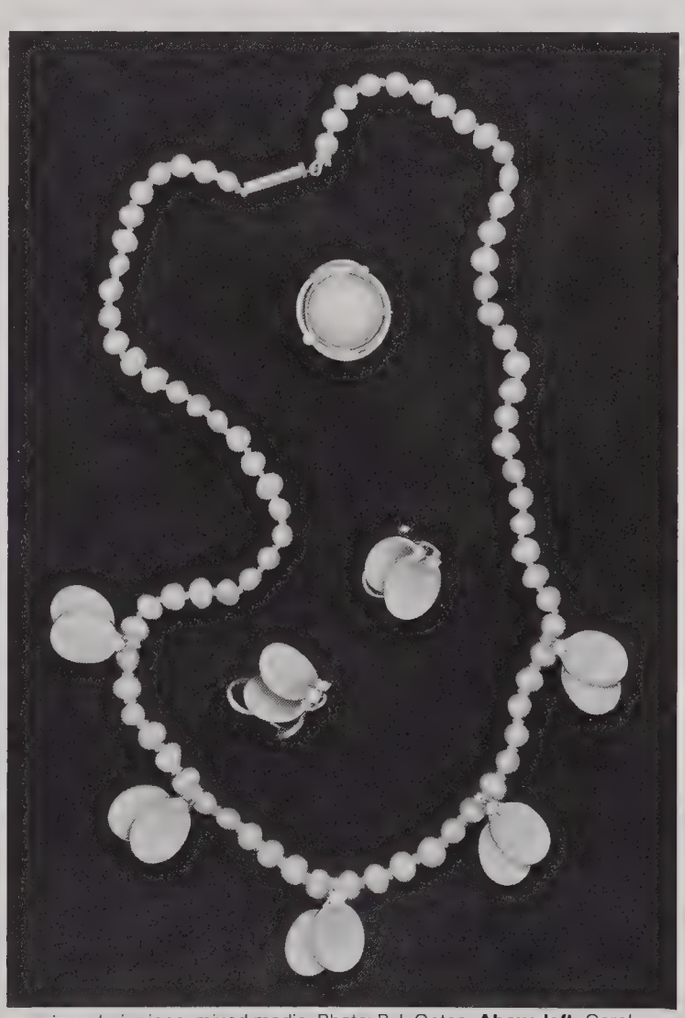
The mixed-media category offered a variety of sizes, shapes, colors, patterns and materials. Titanium was used extensively in quite a few collections. Yes, surprisingly, the market in London is still somewhat flooded with "titanium madness." The silver jewelry section was enhanced with various stones, gold, steel, enamels and much more. While some artists highly pol-





Left: Mic Hodgson, *Collar,* colored fiberglass resin **Top right:** Andy Wlodarczyk, *Containers,* anodized aluminum; covers: steel, ceramic and sycamore with silver hinge tab **Above right:** Robin Bush, *Bowl,* steel, patinaed blue with silver insets





Top left: Evan Hunter-Smith, ribbed brass bangles, earrings, hair piece, mixed media. Photo: P.J. Gates **Above left:** Carol Nevard, *Eggs and Chips, Eggs and Bacon* brooches, silver with gold details. Photo: P.J. Gates **Right:** Jane Sarginson, *Petal* necklace, earrings, 18k gold, diamonds, freshwater pearls. Photo: P.J. Gates

ished their silver, others utilized oxidation to create an entirely different effect. Resins were used, but not as excessively as in the past. Diamonds were included in most of the platinum jewelry, and many of the designs were more traditional and less daring or experimental than in the mixed-media work. In gold, 9k was used almost as much as 18k, which provided the general public a feasible gold price range. Unfortunately, silversmithing represented a small percentage of the show. Silver thimbles, spoons, picture frames, cigarette cases and much more were displayed together with sculptural objects and boxes in various materials.

Goldsmiths' Hall held its first "Loot" exhibition in 1975 with no intention of repeating it annually. "Loot VII" has been called definitely "the last 'Loot.'" It is sad to see an end to this show, because it allowed students, teachers, hobbyists, freelancers, virtually anyone, to design and execute a small series of work for potential exhibition pieces. This year there were four selectors: Gerald Benney, David Thomas, Cathy Stevens and Anne Marie Schillito, all practicing designers and craftsmen who are also members of the Goldsmiths' Company. They were urged to be highly selective and only accept pieces which combined the highest standards of craftsmanship and design.

As the Goldsmiths' Company does not take any commission on sales, the cost of mounting the exhibition is primarily supplemented by the Goldsmiths' Arts Trust Fund, helped by the minimal entry fee. The artists can make good profit on their sales due to their "low overhead." The public profits as well, because "Loot" has built a reputation as being one of the best collections of jewelry and silversmithing available with a wide variety of well-designed, well-crafted work, offered on a limited production basis at a reasonable price. A catalog including the names and addresses of 249 designers and craftsmen as well as 152 retail outlets where they display their work was available for approximately $1.35. The exhibition occupied three large rooms and a small hallway. The work was exhibited very effectively in glass showcases, allowing excellent viewing from all angles.

Perhaps there will be something very similar to "Loot" next year, maybe even better. No one really knows what Goldsmiths' Hall has up their sleeves.

Health Hazards

Questions & Answers
by Linda Weiss
Linda Weiss will answer questions submitted by readers in this column. Address them to her at P.O. Box 1032, Sausalito, CA 94966.
Dear Linda: Seeing your new column in the Fall/81 *Metalsmith* magazine delighted me! It is a needed improvment to a journal which has tremendously escalated in quality in the past two years. I am pleased at the addition.

My question has been formulated for quite some time. Now I have someone to ask. I hope the information will be helpful for others who work with nickel. I have been told that nickel is a carcinogenic metal. If this is true, in what way is it dangerous to the jeweler-metalsmith? Is it harmful to have nickel come in direct contact with the skin? Are harmful fumes produced during reticulation or perforation of nickel?
—Diane Maisel

Dear Diane: Many substances and conditions in the jeweler-metalsmith's working environment have the potential to cause health and safety hazards. The determining factor in whether or not this harmful potential is realized is usually the personal work habits of the metalsmith. With the exception of asbestos, there are very few things in the metalsmith's working environment that will cause cancer or health problems by just innocently existing in the studio.

My source for this answer is an invaluable paperback titled *Work Is Dangerous to Your Health—A Handbook of Health Hazards in the Workplace and What You Can Do About Them* by Jeanne M. Stillman, Ph.D. and Susan M. Daum, M.D. (published in hard cover in 1973 by Random House and reissued in paperback in 1978 by Vintage for $2.95). This book is very easy to use because it has several indexes: a general index, and an index of substances. It also has health hazards listed by occupation. On page 57, nickel is listed in Table 6 as being an "Important Irritating Industrial Chemical." On page 59, in Table 7, nickel compounds are among "ten of the Most Common Groups of Chemicals That Cause Contact Dermatitis." Nickel will usually cause irritation and/or dermatitis when it is in direct contact with the skin. Unfortunately, the skin reaction will often look like any other skin reaction so the cause goes unsuspected. However, most likely the skin will only be irritated where it comes in direct contact with the metal. Visual symptoms are pimples, rashes, flakiness. Once the direct contact with the metal is removed, the skin disorder should clear up. There is a chance that you may become hypersensitive and develop Contact Dermatitis. This is more of an accumulated reaction which can be triggered by very brief exposure. It involves the body's immunity system reacting against a substance that it remembers from a previously occurring irritation. This initial irritation may not have even been perceptible to the worker. The length of time between exposures will not diminish this type of reaction. It is very similar to an allergic reaction, and can occur even hours after the contact with the metal has been discontinued. If a metalsmith suspects that he or she is having this type of reaction, the best thing to do is to take your suspicions to your physician. The above-mentioned book has a very thorough section on skin irritants and reactions. It would probably be safest to design jewelry so that any nickel parts would not be in direct contact with the skin.

Several of my resource books refer to a specific name for an allergic dermatitis caused by skin contact with nickel salts—"Nickel Itch." However, I could not find any reference to where one would encounter nickel salts.

The Stillman, Daum book also states that "There is some evidence that metallic Nickel dust causes cancer of the respiratory tract and nasal sinuses." Obviously, one has to inhale a dust before it can do this type of damage, so, a wise precaution would be to wear a particulate mask during any dust creating processes.

It seems that the most dangerous form of nickel appears in the vapor form of a compound called nickel carbonyl. I could not determine from Paulette Myers's paper on nickel-silver perforation if these vapors are produced by perforation or reticulation. Nickel carbonyl vapors are produced when welding stainless steel alloys that contain nickel. (I do not know, at this point, if nickel carbonyl vapors are produced when soldering white gold alloys that contain nickel.) These vapors are harmful in very low concentrations. The TLV (threshold limit value) is 0.001 PPM (parts per million parts of air). I am hoping that perhaps Paulette is reading this and can assist in determining if these processes produce nickel carbonyl vapors. Symptoms would be shortness of breath, dizziness, headache and nausea—more intense exposure will result in more intense health problems, like asthma, pulmonary edema, cancer. So, if you are concerned about living a long, healthy life, it would probably be safer to work in a well-ventilated area and take other appropriate precautions to avoid breathing nickel dust and nickel carbonyl vapors. Nickel, like most potentially hazardous things that we encounter in our work environment, will only be as harmful as our work habits allow it to be. With proper occupational hygiene and safety precautions, the jeweler/metalsmith should be able to continue working with nickel alloys and remain healthy.

Metals for the Metalsmith

Alloying and Preparation of Precious Metals
by Lane K. Trubey
This is the first of an ongoing series by a variety of writers concerning the nature of metals for studio metalsmiths. Lane Trubey has been a metalsmith for over 12 years, has won awards for his own jewelry and for the past three years has operated his own company, Allan-Kimball Ltd., in Farmington, MI, specializing in custom handmade gold and platinum jewelry.
Taking pure gold to a more useful karat while maintaining a pleasing color and desirable working characteristics is an area usually left to the likes of Handy & Harman, with their vast furnaces, power rollers and drawing machines, and megabuck quality-control labs. It is possible, however, for the individual metalsmith to turn out very serviceable bar, plate and wire in a wide array of karats, colors and sizes in small quantity with remarkable ease. With some experimentation, special alloys can be developed to fit a particular job or application much more closely than off-the-shelf stocks. Best of all, the service charges tacked onto your gold bill (often as much as 45% in small quantity) are effectively reduced to zero, and your shop need not be dependent on outside sources for karat gold stock.

What You Need
A Source of Heat for Melting. Of all the problems I have encountered in alloying and rolling, the most irksome is brittleness. Through conversations with the shop people at Johnson-Matthey (platinum refiners) I found that my metal was being contaminated by unburned carbon from the oxyacetylene flame I was using for melting. It seems that this unburned carbon is catalyzed by the hot metal, converting it to carbides. Even in the minute quantities produced, these add to the brittleness of the metal and promote cracking. This phenomenon can occur not only with acetylene, but with any of the common carbon-based gases; propane, MAPP or natural gas. Their suggestion was to convert to oxyhydrogen for melting: the flames are clean-burning and provide a better method for heating all metal.

Unfortunately, the lower temperatures, narrow burning characteristics and near invisibility of small oxyhydrogen flames limits their use for delicate jewelry soldering. I use oxyhydrogen for all platinum work, melting, annealing and general large-scale heating, but otherwise use my regular (oxyacetylene) torch for fabrication and small soldering jobs. A hydrogen-only flame is very useful for annealing very thin wire or sheet, providing a large soft envelope of flame which helps minimize spot burning and overheating in what can be a tedious job.

Hydrogen is available in large commercial cylinders (240') for lease at about $4 a month, with the contents costing about $16. The regulator is simply a converted oxygen regulator, as the pressures to be reduced are roughly the same. A sympathetic gas dealer can advise you fully on this wholly worthwhile investment.

I currently burn my gas through a Meco torch for large work, with a Smith's Micro Torch for fine platinum work, operating both at between 25 and 30 p.s.i. Lacking either of these torches, a standard oxyacetylene handle can be used.
Crucibles. For gold, a small or medium-sized casting machine crucible fitted with a wire handle is good for small batches, having a dandy little hole for pouring ingots. For melting platinum for rolling or drawing, fused quartz or zirconia crucibles (both available from Wesgo) are necessary.
Molds. Adjustable three-piece ingot molds are available in various sizes from most supply houses. For small quick-and-dirty batches, I have often cast ingots directly into a groove cut into a piece of firebrick or charcoal, or even melted the lump at my bench into a ball, then *gently* flattened it into thick plate with my bench steel before rolling.
Miscellaneous Tools. Tongs, flux, mill, tweezers, drawplates for wire and so on.

Basic Alloying
Since karat gold is based on a system of parts-per-24, the fastest method of finding the amount of karat gold obtainable from a given amount of fine gold is simply to multiply the weight of 24k by 24, then divide by the number of the desired karat; this will give you the total weight of your finished alloy.
Example:
5.22 dwt of 24k yields how much 14k?
5.22 x 24 equals 125.28; divided by 14 equals 8.948.
The total weight of the 14k will be 8.948 dwt, of which 5.22 dwt. is 24k, and 3.728 dwt is alloy material.
This system is also handy for lowering the karat of already alloyed gold, for instance:
How much 14k can be made from 7.1 dwt of 18k?
7.1 x 18 equals 127.8, divided by 14 equals 9.128
The total weight of the 14k will be 9.128 dwt, of which 7.1 dwt is 18k, the balance additional alloy material.
For finding the amount of fine or higher karat gold needed to make specific amount of alloyed gold, simply flip the equation over:
How much 24k is needed to make 1.13 ozs. of 14k?
1.13 x 14 equals 15.722, divided by 24 equals .655
You will need .655 ozs. (13.1 dwt) of 24k to make 1.13 ozs. of 14k.

Alloy Materials
The finished color of the alloy is determined by the type and proportions of the alloy material you use: the depth of color is determined by karat. Higher karats, while slightly more expensive, yield deeper colors. This can be a strongly positive factor in fine-quality handmade jewelry, even if the metal used is only one or two karats higher than "standard" karats.

Gold alloyed with pure copper will tend toward red, the higher karats being quite rich and impressive in color, like a good suntan. As the karat decreases, the color becomes a bit paler and rosier. Above 16k the metal is quite ductile and causes few problems with copper-related skin discoloration. Gold alloyed with fine silver will

yield green gold, commonly called Electrum when very high karat. The high karats (21 or 22) are extremely soft, but excellent for non-load-bearing details because of their color. Even through 14 karat, green golds are difficult to use and fairly impractical because of this softness.

I have found that, except in extreme cases, yellow-that-is-very-green alloys are more suitable for most jewelry work than gold alloyed with a single metal. Yellow golds are a compromise between red and green alloys: a good place to begin investigation is a 14 karat gold with the alloy material consisting of 60% copper and 40% fine silver. This will yield a color similar to the commonly used #2 yellow. From there, small experimental batches will land a color which you find suitable for your own work. Keep notes.

White gold is nominally red, not green, gold to which fine nickel (maybe 12%, depending on whose book you read) is added to reach the desired karat. High karats contain palladium or platinum in addition to the other metals. These are extremely tricky alloys to make, tending toward brittleness seemingly without provocation. I have had fair success with 15 and 16k white alloys, adding up to 9% nickel, but found a reasonable 14k alloy quite recently, entirely by accident. I was lowering the karat (to 14) of an existing 18k yellow, the existing alloy material being 50% each of copper and silver: wanting a slightly green alloy, I was adding silver. The silver turned out to be fine nickel, and the gold turned out to be a lovely, ductile white. This notwithstanding, I usually try to convince my customers to opt for platinum in their pieces where white metal is desired, and avoid white gold wherever possible.

Regarding Zinc

Most "professional" formulas for yellow gold ask for a certain quantity of zinc in their alloys, in place of some of the silver I suggest here. Zinc melts at 787°F, rather lower than the other metals in common karat gold alloys; thereby violating the "keep-the-melting-points-similar" rule common to alloying. The subsequent overheating of the lower-melting-point metal can cause it to oxidize and burn, a phenomenon familiar to anyone who has tried to melt or solder a piece of gold jewelry assembled with soft solder. Eliminating zinc seems to raise the melting points of my alloys but the relative stability of the constituents I suggest allows the metal to withstand the higher temperatures with little trouble. Because overheating and burning problems with ready-made alloys are reduced, the metal can be successfully remelted, recast and rerolled over and over, making your cycle of usage of gold stock vastly more efficient. Removing zinc from your alloys reduces the embarrassing "black finger" that some people get from wearing zinc-bearing karat gold alloys.

Methods

Heat and flux the crucible first; but never flux a quartz or zirconia crucible if you plan to use it for platinum. The higher melting point of platinum vaporizes the flux, making a smoky mess.

1. For red golds, add the copper to the crucible and bring it to melting: add the gold and bring it to melting using a softer flame. Then, still gently heating the molten metal, agitate the mixture. Remember that the metals must dissolve together, much like sugar in coffee. Continue the agitation for about 30 seconds, then cool the metal.

2. For green golds, melt the gold first, then add the silver piece by piece, still gently heating the metal. It will appear that the gold is drinking the silver; it isn't. Because of the differences in melting point and specific gravity, the silver will tend to float on the surface of the gold rather than dissolving nicely. Agitate as above, being careful to use a soft flame and not overheat the metal. Cool the metal until it solidifies, then flip the button over and remelt and agitate as before to insure complete mixing.

3. For yellow gold, melt the copper first, then add and melt the gold. Agitate as above; then add the silver and agitate again. Cool the metal until it solidifies, then flip the button and remelt to assure mixing.

4. For white gold, melt the copper and nickel together, then add and melt the gold. Agitate as above. It is imperative that this alloy not be overheated, as bubbles of copper and nickel oxides will completely ruin the batch.

You will notice that in all of the alloys containing copper, the copper is melted first; while it is easier to melt the gold and let it absorb the copper, prior melting of the copper drives off any oxides which may be present on the surface. The presence of these oxides in the finished metal can cause pitting or cracking.

Casting and Rolling

When using a steel three-piece mold, it is necessary to heat the mold, but not to a great extent, perhaps 300-400°F. A small quantity of spray-type penetrating oil sprayed on the surface of the mold after warming will help prevent freezing and partial filling of the cavity in most cases. When the hot gold hits the oil, the oil vaporizes and keeps the gold away from the relatively cold sides of the mold long enough for a complete fill.

Pickle the metal thoroughly; anneal the metal once at this point. Trimming of any flash, thin spots or obviously crystalline metal before rolling helps to keep the bar from cracking; also, rolling the metal in one direction only between annealings will keep the metal flatter and free from torn edges. Anneal the plate every five or six passes as necessary.

If you have combination square/flat rollers, narrower ingots can be rolled directly for eventual drawing into rod or wire. Any flash created by your rolls must be filed off your bar: but this flash can be largely eliminated by reducing the bar less than .07mm per pass and indexing the bar 90° and rerolling it, effectively squaring it up before each new adjustment of the square rolls. If you simply roll the flash back into the piece, eventual drawing will cause it to raise from the surface, creating a product similar to (and as useful as) barbed wire.

Melt-and-Roll of Platinum and Iradium-Platinum

Several "musts" apply:

1. Cut out any sizing lines or solder from scrap.

2. Use only non-carbon-based gas for heating.

3. Use only nonfluxed quartz or zirconia crucibles and molds.

4. Use eye protection: this means #2 or #3 cobalt blue lenses, *not* sunglasses.

The back of a quartz casting machine crucible makes a decent ingot mold for platinum, and the grooves cut for the crucible carrier make bar good enough to roll into square wire. Melt the metal directly on the back of the crucible, then let it flow out along the groove as desired. Keep tools and picks out of the molten metal. Before annealing (also on the back of your crucible) it is a good idea to pickle the metal in a hot 20% solution of hydrochloric (or muriatic) acid to remove any residual iron from your tools. If the ingot sticks to the mold, don't chip it out: when the metal cools, differences in expansion rates between the metal and crucible will free it. Be careful, as platinum melts at the slightly unbelievable temperature of 3224.3°F.

Rolling of properly prepared platinum alloys is actually much easier than working karat gold; its extreme ductility (which some people confuse with softness—Iridium Platinum is *not* soft) allows it to be brutalized into sheet or rod with remarkable speed. It needs infrequent annealing and only rarely cracks.

Platinum Solders

Platinum solder, often difficult to obtain (and beastly expensive), can also be made in the shop. Formulas consist of varying quantities of platinum, palladium and gold, with most of the available solders being for high-strength industrial uses, with little attention paid to precise color match and polishability. Many platinum solders flow very nicely, but leave little lines at the joints where they are "pulled out" by lapping. Platinum is mixed directly with 24k gold, in proportions ranging from 20% gold for *very* high temperature stuff; down to alloys with more than 50% gold, and up to 20% palladium for repair solders. A good, general-purpose solder can be made with 45% gold, 55% platinum. I find that it is of decent color and does, indeed, polish fairly well. The gold will tend to vaporize slightly and condense around the joint, leaving a yellow "bloom" on the surrounding metal; it polishes off, effectively leaving the joint with higher platinum content and, therefore, of slightly better color. For sizing platinum rings and fine wire work, I find that a solder of 30% gold, 70% platinum is the most satisfactory.

Aurum, a quarterly technical review for jewelry manufacturers and goldsmiths, International Gold Corporation, Geneva, Switzerland, English edition, $30 annually, including airmail shipment, approximately 50 pps. per issue

The function of *Aurum* is to present technical information on gold and gold alloys to the goldsmith and manufacturing jeweler. Its pilot issue of March, 1979 and each of the seven subsequent issues have followed a pattern of presenting articles on: historical processes and techniques, such as granulation, antique methods of casting and ancient techniques for wire making; basic metallurgy for the goldsmith; "Gold Alloy DATA" sheets—data on specific gold alloys, such as 18k Red (750 Y-4); information relevant to the business side of goldsmithing; profiles interviewing jewelers and gallery owners, such as Barbara Cartlidge, director of Electrum Gallery in London; and articles of general interest or information, such as "Sawing Karat Gold Alloys" and the making of hollow wax models.

While *Aurum* calls itself a technical review, only the most adamant "anti-technician" would find this periodical uninteresting or difficult to read—*Aurum* is not a dry technical journal. The writing is extremely clear and beautifully illustrated with photos, drawings and graphs. It is especially useful to the non-German-reading goldsmith; for most technical information on goldsmithing is in German (the noted exception being the Worshipful Company of Goldsmiths' technical papers).

I have only two significant criticisms of *Aurum:* One, the articles occasionally run as a series, where one longer article would be more satisfying; I hate waiting three months for "Part II." The other criticism may be premature on my part, but, the "Gold Alloy DATA" sheets have only covered alloys that are best melted and cast in vacuum or under a protective gas atmosphere; there is no question that this is desirable for all gold casting, but few small shops or individual jewelers can afford such equipment. I hope alloys for atmospheric casting will be covered in as much depth and number in future issues.

I find myself hard pressed to recommend a new book or periodical —*Aurum* is a very pleasing exception. It is an extremely fine publication that fills a definite need for goldsmiths and manufacturers. It does not fall into the trap of interviews with the same dozen personalities and their same boring comments, it is not *People* magazine. I trust most jewelers and metalsmiths, even those who do not work with gold frequently, will find *Aurum* useful and delightful to read.

For more information contact: *Aurum,* Technical Advisory Service, International Gold Corporation, Case postale 351, 1211 *Geneva 3,* Switzerland.

—Joseph Hall

continued...

George Wickes: Royal Goldsmith, 1698-1761 by Elaine Barr, Rizzoli, in association with Christie's, London, 1980, $37.50, cloth, 210 pages with 158 illustrations, 40 in color

I had some problems reviewing this book because I was not entirely sure whom the author was writing for. But for the *Metalsmith* audience I would say that at $37.50, you will not find very much in this book to make you happy. It is in many places as exquisitely boring as the "begat" department in the Bible.

Does this mean it is a bad book? Probably not. I expect that it might be quite valuable to scholars, collectors of English silver, curators and dealers. Being English would help, for it is clear that the possibility that an American might read it had little effect on the writing of it. The value that the book does have lies in its careful description of George Wickes's surviving pieces and its insight into the organization of the silversmithing craft in London during the 18th century. A description of the primary sources that served as the foundation for the work's contents will help explain my reticence in recommending it to metalsmiths.

George Wickes completed his apprenticeship as a silversmith in 1720. Before too long, and with the help of an advantageous marriage, he became a very successful craftsman and businessman and gave up the business in 1760. The firm he founded continued through a variety of successors until the 1950s, when it was known as Garrards. When Garrards was acquired in 1952 by the Goldsmith's and Silversmith's Company of Regent Street, a huge lot of its books, fittings and furniture was sold at auction. During the preparation of these properties for sale a virtually complete set of the firm's ledgers dating from the founding of Wickes's business in 1735 and extending to modern times was found, fortuitously rescued from a trip to the pulp mill and deposited in the Victoria and Albert Museum, where the author was able to study them. What makes these documents important is they are the only 18th-century goldsmith's ledgers known to have survived. These ledgers and account books form a major part of the framework on which she reconstructs the history of George Wickes's life, his work and the society in which he lived. But the ledgers are not all. For reasons that I can only attribute to peculiarly British obsession with geneology, the reader is forced to either read, skim or skip over interminable tracings of family relationships, birth, marriage and death dates and places of not only George himself, but those of his wife and her relatives and his various partners, apprentices and clients and their wives and relatives.

With little but bookkeeping data and church, court and town hall records to work from, you might expect the author to give you lots of detailed information on who bought what piece of silver, how much it weighed and what was paid for it, as well as to describe all the little twigs and rootlets on everyone's family tree. And she does. Will it now surprise you to hear that there is only one index at the end of the book, and it is not a subject index but an index comprised only of between 400–500 names mentioned in the text?

As I have already said, I am sure this very thorough, competent and dedicated research resulted in a valuable resource for certain readers. For contemporary metalsmiths there is some interesting material and I will try to distill and share it with you.

The information relates to the way the silversmithing business was organized and conducted during Wickes's time. I use the word "business" instead of "craft" because I discovered that silversmiths' attitudes about their work then were different than our attitudes about our work now. Before exploring that idea, it might be helpful to restate something that most of us already know; that the 18th century was a time when work in silver and gold reached a pinnacle in terms of technical quality, quantity of output and indulgence in ornamentation. Silversmiths then were as ubiquitous as TV and air-conditioner repairmen are now, which tells us something about the objects different societies think are important.

The most fascinating aspect of the book for me was the finding of clues here and there that Wickes and his colleagues saw themselves as businessmen or skilled workers, in contrast with us moderns who think of ourselves as creative artists with a special calling and egos to match. The message was that there was nothing unique about becoming apprenticed to a master silversmith.

Most American artists and craftsmen today probably don't think of retirement the way factory workers or executives think of it. Why retire when you're already doing what the executive has been looking forward to doing all those years? George Wickes retired very well-to-do at age 62, to live as a country gentleman. Samuel Netherton, his partner and former apprentice, retired with him. Netherton was only 37 at the time. Wickes may have been ill, for he died a year later, but Netherton, an outstanding craftsman, lived another 43 years! What does a man with such skill do with his time? According to this book he also lived well, kept in touch with the firm in London and served as Sheriff of Worcester during his middle-fifties.

With these self-perceptions in place, it is easy to understand many of the other practices followed by the 18th-century silversmith. Take design, for instance. To us, self-expression is the sacred cow of crafts, with function and formal considerations something only squares think about. Eighteenth-century silversmiths made unabashed use of the many pattern books being published at the time. They were not above copying each other's pieces openly. In fact, Wickes's important contribution to the art was his popularization of the rococo style brought from France by such famous Huguenot silversmiths as Paul DeLamerie and Paul Crespin.

The rococo style employed heaps of sculptural decoration which had to be modeled in wax and cast. There were numerous art students as well as accomplished artists available to do the modeling as hired hands. Where there is casting there are molds. Competing silversmiths often shared molds as well as modelers. They even bought finished works from each other for resale to their own patrons.

Those were lively times indeed! How did the silversmiths respond to government regulations? The government attempted to collect from each maker a duty of six pence per troy ounce on each piece sold or exported. Besides this extra cost to the craftsman there was a mass of paper work and other onerous side-effects, such as substantial fines for noncompliance and the freedom of tax officers to enter the workshop and make an inspection and accounting without warning. Tax evasion being a historically venerable and universal sport, the silversmiths played the game when they could and resorted to a variety of clever ploys. Sometimes pieces were delivered to clients without visiting the assay office. A maker would occasionally stamp his piece four times with his mark so the object looked like it had the regulation four hallmarks (maker, year, metal, city of assay). Wickes got caught at least once with this one. Assay office stamps were forged (excuse the pun). Foreign-made pieces were smuggled in, and vice-versa. Probably the most outrageous "duty-dodger" was the very heavy piece that looked like it had been properly marked, except that the marks had been originally and legally stamped on a very small piece brought to the assay office. Duty paid, the little sacrificial porringer went back to the shop, a neat disc containing the marks was cut out of it and soldered invisibly into a hole cut in the 800 ounce soup tureen! Apparently it was felt that all the extra work and risk involved added up to less than the legal duty.

If the attitude of silversmiths 200 years ago was different from ours, what was the attitude of the clients? Apparently they did not see their possessions as precious artworks, except for their intrinsic metal value. We get one clue from the vast amount of repair work that went on in Wickes's shop. The pieces were really used, not just displayed on the sideboard. The servants may not have been any clumsier than they are now; they may have handled the silver as so much tupperware. Another indication of the sentiment of the times was the very common practice of bringing perfectly useful and beautiful silver pieces to a silversmith to be melted down and remade into new pieces whose style would be in the latest fashion. Can you imagine the Secretary of State commissioning a work from Heikki Seppä and giving him a Paul Revere piece to melt down for the silver?

Another aspect of the book that may be interesting to contemporary metalsmiths is its description of the way the day-to-day business was carried on. Of course, the ledgers constitute the all-important window. We learn something about the apprenticeship system, the layout of the workshop, the roles played by the journeymen, sub-contractors, partners, designers and modelers. A lot of information, not too clearly explained, is given on how Wickes priced his work. He seems to have had at least two systems: For standard utilitarian pieces he had a varying price per ounce depending on the intricacy of the piece. The basic cost of sterling at that time was a little over five shillings per ounce. For a simple piece he might charge six shillings per ounce; for a piece involving casting or chasing the cost could come to 15 shillings per ounce. Important pieces involved a flat rate for the silver and a separate cost for the execution. Subcontracted work, such as engraving, was listed as a separate charge. Considering the fantastic skill of the engravers Wickes hired, the cost of their work was surprisingly low.

I wish I could tell you more about the pricing system and 18th-century trade practices, but unfortunately there are frustrating gaps in the book. As I said before, the author seems to have assumed the reader to be English and well-versed in the basic aspects of the topic. For someone who was so conscientious about including the minutiae in Wickes's ledgers and family tree, it is inconsistent for her to have forgotten that we here in the former colonies no longer use pounds, shillings and pence. An extra paragraph or two could have provided the necessary sense of scale. What was English money worth in the middle 1700s? An ounce of sterling cost 5 shillings, 6 pence. I have no idea how that fit in with the price of other commodities or labor.

I would like to know more about the apprenticeship system, but I only saw statements that sounded like I was supposed to fill in the spaces myself. What does "freedom" mean? How does one get freedom by service instead of paying a fee? What is a liveryman in the Goldsmith's Company and how does one achieve this status?

With all the detail that is available, there is actually very little insight into George Wickes's personality. Ledgers do not contribute as much as correspondence if the subject's soul is what we are looking for. I would guess that the necessary material was either not in existence or not available to the author.

So, though much of the book reads like an art historian's doctoral thesis, in which it is common for Sherlock Holmesian scrutiny to be applied to a painter's every brush stroke, I did find some interesting information.

—Bernard Bernstein

Jewelry: Basic Techniques and Design by Alice Sprinzen, Chilton, 1980, $15.95 cloth, $9.95 pb

In this ambitious how-to book the author has undertaken to combine several devices that are usually used alone. The conventional "these are the tools and this is how you do it" approach is smoothly integrated with the project format. Those who want to make a series of pieces designed to introduce them to specific techniques will find the plans here, while others can read through these sections without getting bogged down. The author has included several topics of current interest as well as hitting the basic techniques. Some of the welcome additions are chapters on health and safety, fiber techniques, plastics and display. The book is loaded with photos and these are of generally good quality. Many show tools and procedures and have clearly been set up with care and forethought. Work presented covers a wide range of styles and is complimented by brief quotes from the jewelers. Several of the pieces shown appear in other books, but this unfortunate overlap cannot be blamed on the author.

By covering new ground in a book that is about the same size as other books written for this level, some information has been squeezed out. Though mention is made in the text, no explanation is given of engraving, toolmaking or the nature of the alloys commonly used in jewelry. I think the sections on stonesetting, hinges and clasps are over-simplified.

I think this book is worth the price, particularly where it breaks new ground. Its readable style and succinct explanations will assure its place on many bookshelves.

—Tim McCreight

The Jeweler's Craft by Jaime Pelissier, Van Nostrand Reinhold, New York, 1981. 112 pp., $12.95 cloth

This small book promises much more than it delivers. My first impression was that it would fill a need for a text covering traditional skills, as most books on this topic are now out of print. On the jacket the publisher states, "This practical workshop manual with step-by-step 'skill-building' exercises will help you master the traditional, technical skills essential to all jewelry-making. Whether you are an experienced benchworker or an amateur craftsman, you can better fulfill your creative design potential if you master the traditional techniques of jewelry-making." I agree that a mastery of traditional techniques is most beneficial, however I do not think that this book will help one acquire these skills. This is not to say that the author has not tried to assist his readers to enhance their abilities. The problems are with his methods of presenting information.

The book is based on a series of 54 increasingly difficult exercises, starting with simple sawing and filing exercises and quickly moving to catches, hinges, lockets, bracelets and stone settings. The exercises are based on traditional designs which are very clearly drawn but are totally uninspired. I cannot believe that any creative individual would be inspired to reproduce these pieces, yet the author expects the reader to execute each one. Herein lies the problem.

A case in point: the book begins with an introduction to technical drawing and the concepts of orthographic projection. The author uses the latter to illustrate his exercises. From reading the description of this drafting system one may learn how to read the book's drawings but would not come away with the methods used by an experienced draftsman to execute similar drawings. The author does not provide enough information. Assuming too much and not providing enough information limits this text's usefulness.

I have no doubt that the author is a very skilled goldsmith and jeweler who thoroughly understands the traditions of his craft. In writing this book he has chosen to ignore the art of the jeweler. He has also decided to leave readers to their own devices when it comes to basic techniques, such as soldering, forming, polishing, etc. He also believes that his audience knows about all the tools that he requires them to use in executing the assignments. This makes *The Jeweler's Craft* of use to workers who already have extensive prior experience. But will it be of any real use to even these advanced people? I don't think so, due to the very limited descriptions given with each exercise. If one has enough experience to understand the so-called "step-by-step" instructions, it is my belief that they do not need this book.

Finally, a major portion of the book is devoted to the making of stone settings. The foregoing not withstanding, this information could have been made valuable if instruction had been given on the use of these settings to actually hold stones. Again we are disappointed. We are told that this is a job for the stone setter. Perhaps benchworkers in the jewelry trade might find something of use in this book.

—Stanley Lechtzin

The Goodfellow Catalog of Wonderful Things No. 3, by Christopher Weills and Sarah Satterlee, The Goodfellow Catalog Press, P.O. Box 4520, Berkeley, CA 94704, 1981, 712 pp., pb, $19.95 (plus $2.50 shipping)

Don't ask me why I did not know about catalogs 1 and 2, but when *The Goodfellow Catalog of Wonderful Things No. 3,* was delivered to my front door, I was amazed. This wondrous catalog compiled by Christopher Weills and Sarah Satterlee, plus many others too numerous to list, is indeed all it says. Although it is a little cumbersome (because of its 712 pages), and the wrong shape to fit neatly into my bookshelves, I have decided that I could not possibly live without it and all future editions.

It is described as a treasury of the finest examples of current American crafts and I agree: a time capsule that will become a historical document. An added bonus, and its original concept, this anthology is a mail-order catalog. After referring to the "How to Use the Catalog" section, the nifty graphics on the bottom of each page made it even better.

Over the past week *The Goodfellow Catalog* has given me much pleasure. Each time I open its pages, there is something new to delight my esthetic sense. The personal statements and family portraits add an intimacy. I feel I know each craftsman personally. The spirit of individual craftsmanship continues. It is superbly encapsulated within the covers of *The Goodfellow Catalog of Wonderful Things No. 3.* I look forward to a continuing tradition.

—Glenice Lesley Matthews

Rings through the Ages by Anne Ward, John Cherry, Charlotte Gere, Barbara Cartlidge, New York: Rizzoli, cloth, 214 pp., c. 1981, $75.00

Shown in this oversized volume (25½ x 28 cm) are rings from the British Museum and the Victoria and Albert Museum, along with examples from other continental museums and private collections. The work is divided into four historical eras—Antiquity, Medieval Rings, from 1500-1900, and 20th-century rings. The first three parts resemble an informative museum catalog. They are scholarly descriptions of extant rings and comprise a useful text, a valuable historical reference source. However, for the $75, one would expect the last part (20th-century rings) to be a state-of-the-art presentation.

As such, it is disappointing. The book's main weakness is this section, which begins with a full-page color portrait of a model with the author's rings on her fingers. The essay which follows is very difficult to read, as it refers to plates and figures several pages removed. Reference to the illustrations is obscure. For example, an out-of-focus photo of a Paris street on p. 147 is referred to on p. 137. One wonders about the significance of a photo of a street on which a jewelry-manufacturing firm is located, somewhere. To add to the confusion, some of the plates are numbered and some are not. At least nine reproductions of old catalog pages and drawings of proposed rings are included here. These are of limited interest or application. Further, the brief explanations and drawings of casting and soldering techniques and equipment are so inconclusive as to have been better omitted. Fig. 17 on p. 139 is bewildering. Here we have a drawing of round wire being pulled through a draw-plate. Then the wire somehow becomes sheet metal being "trued up" on a ring mandrel. What can this mean?

The author seems to be more impressed with personality and monetary value associated with rings and jewelry than she is with esthetics or design. This is exemplified by her emphasis on such things as illustrations of the Polar Star Diamond on p. 170, in which the design is inconspicuous, and the full-page color photo of Tiffany's panther ring (about 2" of ring) on p. 160.

The questionable value of "witty, erotic and pop-art pieces" (now dated) is presented in this volume as a fait accompli. Innovative design and technique as accomplished by American, Scandinavian and Japanese artists in the past few years are for the most part ignored. There is an attempt to show modern trends by including some acrylic and resin used in conjunction with precious metals, but no mention of electronic jewelry, new processes for coloring titanium, or electroforming techniques.

More diversity is needed in the illustrations in the last section. It is heavily weighted with German, Austrian and British examples, many starkly geometric. It gives one pause to think that this is offered as representative of current design. American work is represented by a 2" black-and-white photo of Mary Ann Scherr's 1969 carousel ring on p. 168 in which detail is impossible to recognize, two of Arline Fisch's rings on p. 198 and a 1975 ring by Eugene and Hiroko Pijanowski. Even though SNAG's 1979-80 touring exhibition is listed in the Major Exhibition credits, the entire remaining spectrum of American design is represented by a 1970 Balfour high school ring, three Tiffany designs and a ring by Rena-B. Koopman. Coauthors John Cherry and Charlotte Gere are from the British Museum. Barbara Cartlidge directs a London Gallery, so one would expect many English examples. However, much sensuous, elegant and sensitive American design is omitted as is native American work.

The comprehensive index is helpful as a guide, especially to the first three sections. Of the 405 illustrations, 46 are in color, but 15 of these are reproductions of old portraits or of sculpture in which the rings shown are almost incidental. The book would be nice to have for its historic examples of rings, but if one wants a definitive work on 20th-century rings or the evolution of design (and function) to date, this book is not worth the money.

—Nita Schleter

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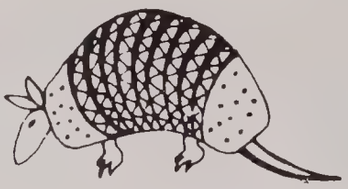

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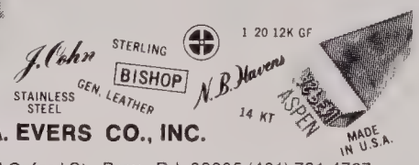

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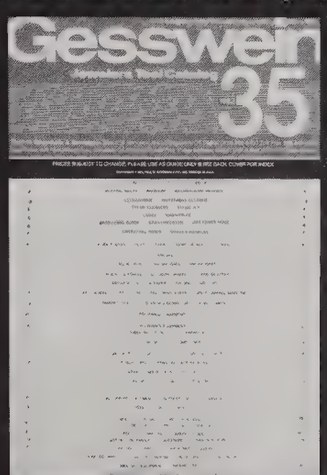

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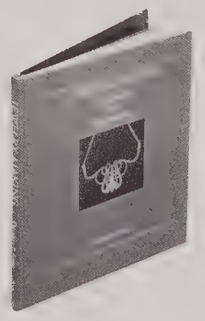

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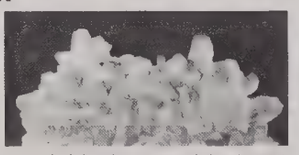

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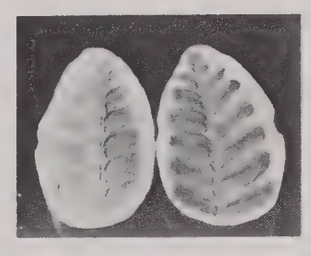

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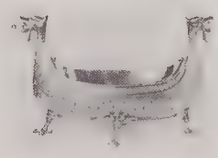

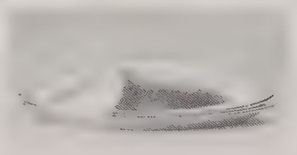

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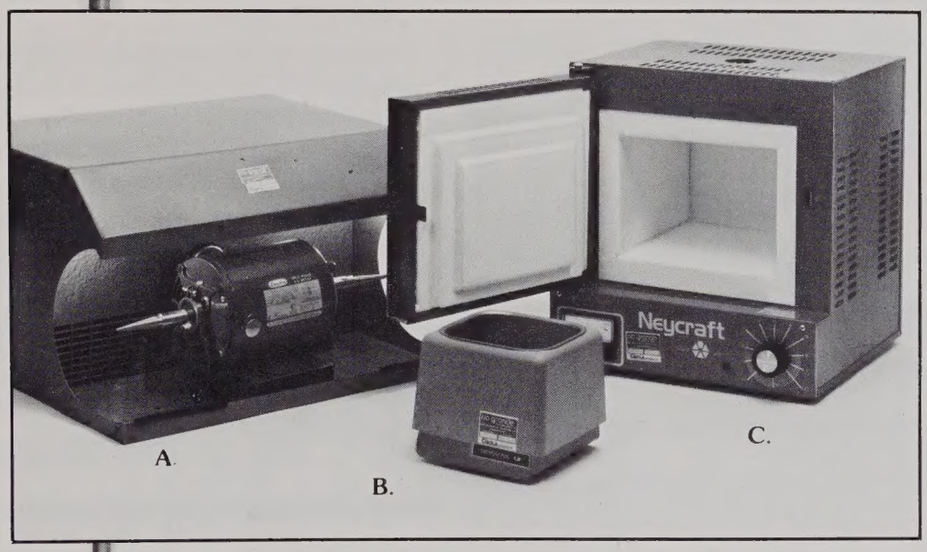

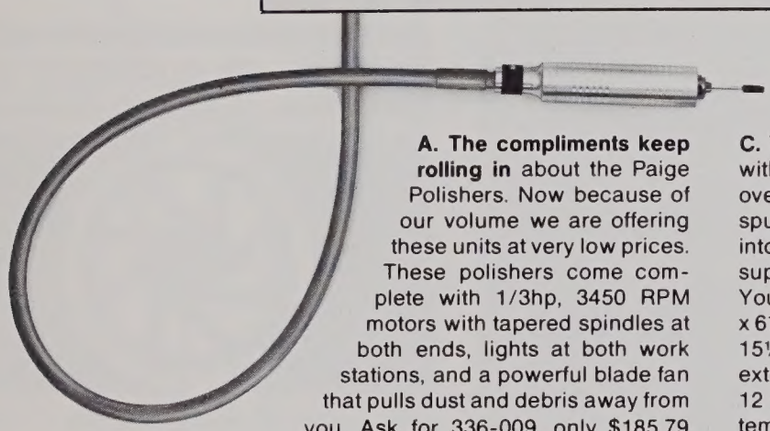

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